JULY
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REVIEWS:
Logic Audio Platinum, T-RackS 24, TASCAM US-428, Behringer Truth B-2031

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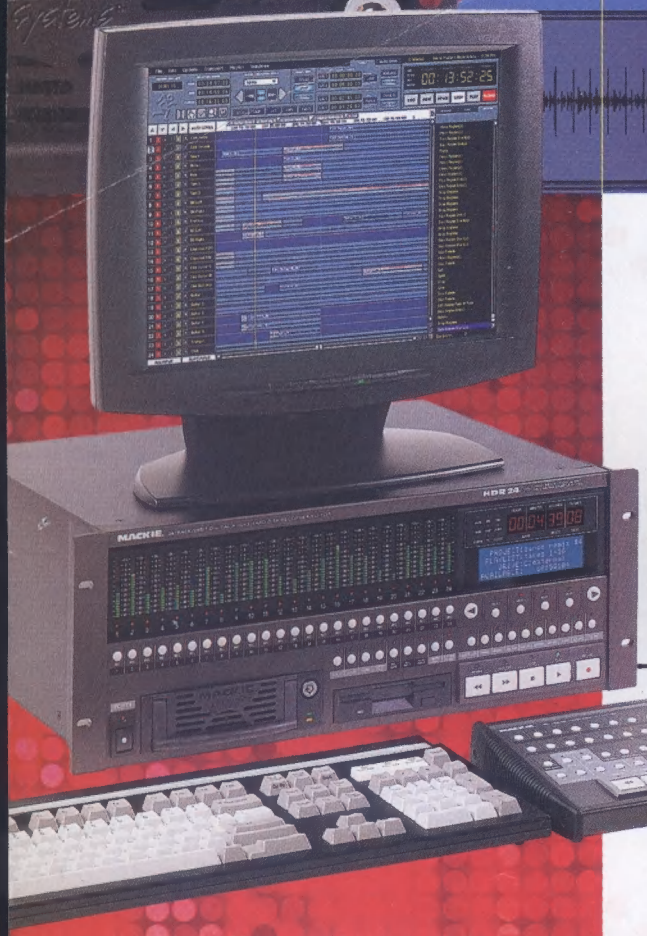


RECORD! EDIT! CREATE!

Plug in the HDR24/96 Recorder/Editor and start recording. No computer to boot up. No hardware and software configuration nightmares. No compromises like settling for 20-bit audio or just eight tracks at a time.

Recording's easy with the HDR24/96.

Simultaneously record twenty-four tracks of 24-bit digital audio…without waiting for lock-up, tape shuttle or CPU lag. Drop up to 192 alternate takes into "virtual tracks." Record onto affordable, removable media that you can swap in and out for each project.

And do it all with your hands on a familiar, analog-style machine (or choose from two sizes of wired remotes) instead of resorting to myriad mouse clicks. All basic functions are right on the HDR24/96 front panel including transport buttons and a Record Enable button for each track.

Editing is easy with the HDR24/96.

Plug in an SVGA monitor, keyboard and mouse, choose from 2x, 4x, 8x, 12x or 24-track views and then watch them scroll smoothly past a centerline.

Mark hundreds of cue points and four locate points for looping and auto-punch-in modes.

Use the mouse to "scrub" individual tracks, Cue, Punch and Loop points with continuously variable velocity.

You can mark a segment (or multiple non-adjacent segments) as a *region* and then cut, copy and paste it anywhere — onto a blank track or right in the middle of an existing track without erasing anything (the part of the track after the insert just "slides down").

You can audition regions or modify their start/end points instantly, capture them as "sound elements" for later use or quantize them to user-defined time grids.

Create fade-ins, fade-outs and cross-fades just by dragging and dropping them …and then set their length by dragging the mouse.

Add volume envelopes for simple level automation of regions or whole tracks.

Then use Render Track to combine all or selected regions of a track just as you hear it complete with cross-fades, volume envelopes, mutes, etc.

Play with the HDR24/96.

Play back twenty-four tracks of pristine digital audio —instantly without any pause or lag time. It will be synched rock-solidly to everything in your studio — from MIDI-based sequencers to VTRs (via SMPTE or video sync).

Then let your partners, clients and friends "play" with your tracks anywhere in the world, thanks to the HDR24/96's Ethernet port and FTP server capability.

If only life had 999 levels of undo. HDR24/96's History list lets you take loads of creative chances.

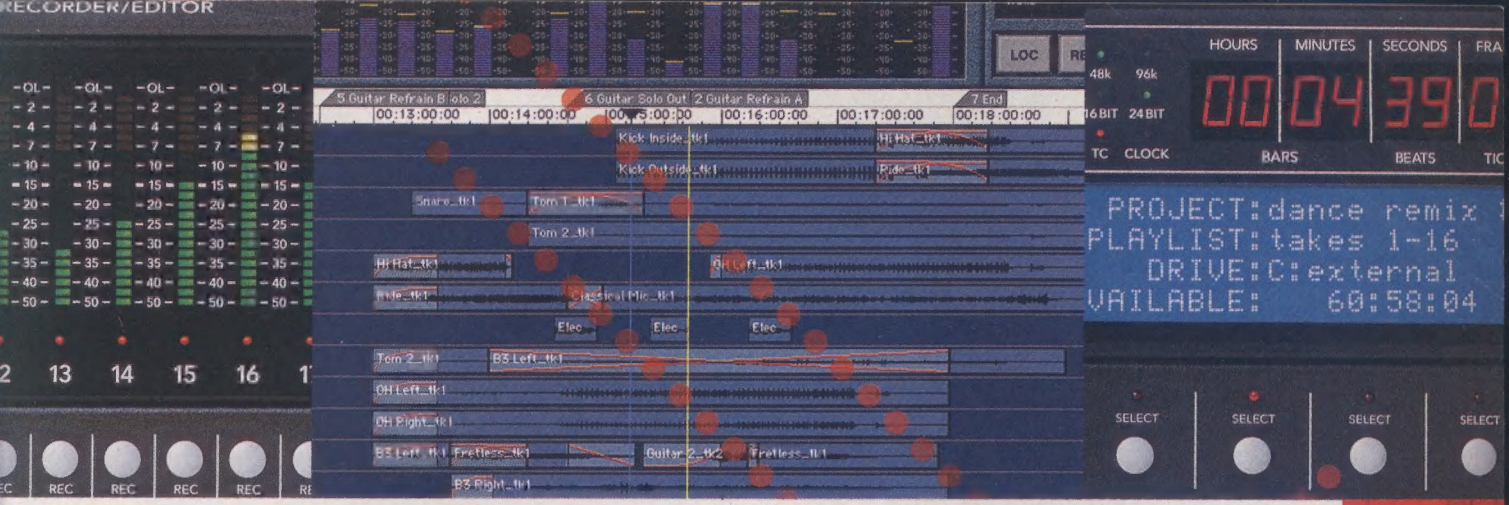
The non-linear HDR24/96 vs. linear hard disk recorders.

Ever since the invention of magnetic tape, recording over something means it's

"…the HDR24/96 is a stunning development with excellent sonic quality, an extensive feature set and versatile file management… it's easy to use and priced right. This one rocks!"

George Petersen
Mix Magazine March 2001

* based on average of length of current pop songs using 24 tracks @48kHz/24-bits and a liberal number of extra regions and virtual takes. Does not apply to extended trance remixes.



SAVE YOUR COMPUTER FOR E-MAIL.

Need to back up just one song? Plug a Mackie Media Project drive into the HDR24/96 external bay and transfer over 2GB to an ORB™ disk.

gone…which makes doing "punch-ins" a dicey gamble. This is called *linear* (destructive) recording. Even some current hard disk recorders use this old-fashioned technology!

The HD24/96 employs true, non-destructive, *non-linear* recording and editing. That means you can record as many versions of a track or track segment as you want without destroying the original. During playback, the recorder recombines the non-linear segments into a seamless soundstream.

Professional remote for a very professional hard disk recorder. Our new Remote 48 lets you run two HDR24/96s – 48 tracks of total control including a weighted jog/shuttle wheel and full display!

And unlike linear-style recorders that treat disk space like digital tape, the HDR24/96 doesn't automatically eat up 24 tracks of disk space when you're just recording one or two tracks. Because it uses only the space needed for actual audio, you get far more recording time per gigabyte of hard disk space.

Professional performance *and* affordable creativity with the HDR24/96.

Non-linear hard disk recording *is* possible to do with a computer-based system. But to achieve what the HDR24/96 delivers – simultaneous, lag-free 24-track/24-bit recording and playback and waveform accurate editing – requires major investment in a *very* expensive digital audio workstation system. Cheap "recorders-on-a-computer card" just don't have the horsepower for multi-track, twenty-four-bit 48kHz recording, much less *twelve-channel 96kHz capability* like the HDR24/96.

Listen to somebody else instead of us.

Here's what ***Mix*** magazine had to say about the HDR24/96:

"…The HDR24/96 is a stunning development with excellent sonic quality…The unit offers an ease of use that should make disk-recording novices comfortable while including an impressive feature set that will appeal to seasoned pros.

"The recorder's faceplate holds few mysteries and most users can be up and recording just minutes after unpacking the HDR24/96."

According to Britain's ***Audio Media***, *"As a recorder (the HDR24/96) is transparent. As a tool, it's powerful. As a creative helper it's perfect. With focus on functional, inexpensive, simple-to-use 24-track recording, Mackie has hit the mark."*

Get a demo at a Mackie dealer.

There are a bewildering array of digital recording options on the market right now. You've heard our two cents worth.

We honestly believe that we've created the best of two worlds: the best standalone non-linear digital recorder, and an extremely robust editing system with ultra-functional graphic user interface. And we've done it without making you enter the *really* cruel world of computer interface compatibility problems.

Twenty-four track masters for under ten bucks each!! Divide the cost of a MackieMedia M90 into the 20+ pop tunes you can record on it and you're looking at under a ten-spot for each 24-track master*. Remember, non-linear hard drives store audio data only, not silence. Tape (and linear hard disk recorders) just roll merrily along…eating oxide and costing money.

Call toll-free or visit our web site (using that computer you won't need to tie up) for more info.

Then get your hands on an HDR24/96 and track some hits.

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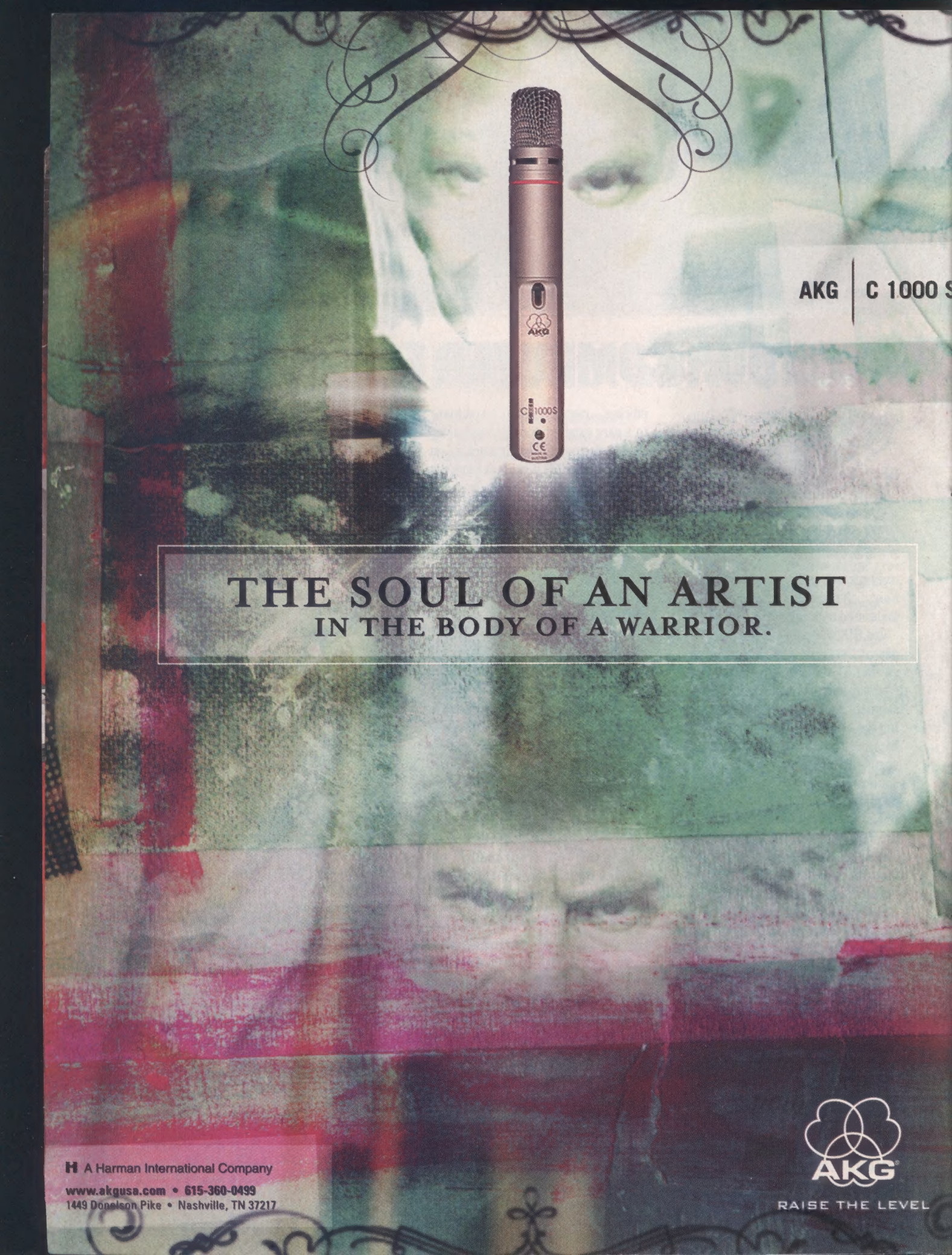
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- 16-bit sampling (phrases from hard disk, CD or computer assignable to eight, dual-level trigger pads)
- 32-bit effects processing (two assignable to any track)
- Onboard CD burner (option...but who wouldn't get it?)
- Dual card slots for optional digital I/O of your choice (export/import up to 16 tracks simultaneously)
- Dedicated metering
- Unbelievable price!

Take note of this date. It's the first day in your professional recording future, courtesy of the AW4416. Once again, Yamaha gives you more for less.

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MATCH THE STICK FIGURE WITH THE RIGHT EFFECT TO WIN!

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- Tremolo Plug-In
- Vocoder

Win a Cool Edit Pro Stickmen T-Shirt!!

Match each stick figure to the corresponding feature name on the left. Visit www.cooledit.com/stick to view the answers and to enter a drawing for one of twenty-five free stickmen T-shirts! All entries must be submitted by July 15, 2001.

As always, no stick figures were hurt in the making of this ad– well, except for maybe #25.

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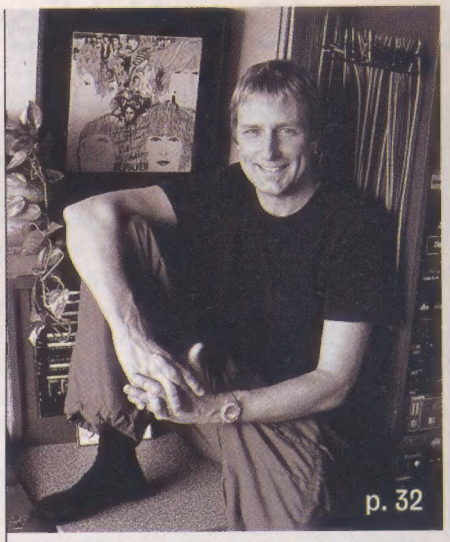
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EDITOR'S LETTER

RUSTY CUTCHIN

A Room with a (Cool) View

When I walk into a pro recording studio for a session, how the room looks is the first thing I notice, of course. But what's more important is how it's set up for *working*. Is all the gear I need available? Has it been properly maintained? Can I find a cable quickly when I need one? Do I have to walk across the room every other minute to tweak a piece of gear that should have been installed next to the board? Does my assistant know where the best Chinese food is, *or do I have to get it myself?*

Okay, now I'm getting cranky. That last need may seem like a luxury, but just thinking about some of the disorganized rooms I've worked in makes me want to scream. You'd be amazed at the sums of money spent on pro studios that don't feel good, don't look good, and are not laid out efficiently. Often the result is that artists and producers don't come back and another studio fails, even if it has all the right equipment.

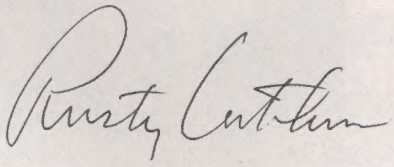
Luckily, your home studio is *your* castle, and, if you want, you can surround it with a moat full of alligators or provide a drawbridge into the Emerald City. If you record with several different artists, you know that most of them are happier when they have an efficient and pleasurable environment in which to work.

A well-designed studio works for everyone, so in this issue we give you some tips on setting up your room with both sight and sound in mind. We tackle the acoustic problems with step-by-step examples for building sound panels and sealing windows and doors. Once you've accomplished that, you can use our studio design tips to install the right furniture and accessories in the right places. To paraphrase our old friend Fernando (a.k.a. Billy Crystal) from "Saturday Night Live": It is never better to *look* good than to *sound* good, but your room *will* look *marvelous*!

Speaking of late-night comedy, Will Lee needs no introduction to either the TV or studio crowd. The bassist for David Letterman's show and session superstar demonstrated exactly the kind of design savvy we're talking about when he showed us his "bedroom" studio in Manhattan. It's got all the gear you could ever want, plus room for a V-Drum kit and a rack full of basses—now that's a *stupid* studio trick, and I mean that in a good way.

If house music, electronica, and the current dance scene are your thing, we have *stupid dope* tips from three of the biggest duos rocking the clubs—Daft Punk, Deep Dish, and John Digweed with his partner Nick Muir.

And finally, we have some *stupid fresh* faces here at HR we want to acknowledge. Home Clinic columnist Barbara Samuels (Babz) is a guitarist/producer/studio owner who has been dispensing sound advice on a variety of musical issues over the Net. Steve Goulbourne is HR's new art director (How *did* he get that studio into that guy's head on the cover?), and Abbie Tuller is our new senior managing editor. They're all crucial pieces in our grand design—to help you make better recordings, whether your room was built for Donald Trump or Donald Duck.



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EDITORIAL
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Where Do You Need to Record Today?

With Sound Devices USBPre 1.5, the World is Your Recording Studio

You've imagined that someday, someone would build a small, portable box that does everything needed for hard disk recording. That day is here.

Introducing USBPre. Very big performance in a very small package. It is unquestionably the easiest and most direct digital audio interface for your computer. Plug the USBPre into your Mac or PC's USB port with one cable and you're ready. Start recording. Start streaming.

Features include: 24-bit A/D converters, two channels of studio quality mic preamps, 48-volt phantom, S/PDIF coaxial I/O, high-impedance low-noise instrument DI, line inputs, headphone monitoring — all powered by your computer.

SOUND DEVICES

For detailed product information visit us at our web site, www.sounddevices.com or call (608) 524-0625.

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FEEDBACK

Tape Dead? Hah!

Hard disc, blah, blah, blah. Recall, blah, blah, blah. Plug-ins, blah, blah, blah. Yes, I know it's all a very good thing, and I look forward to reaching that level, but is "tape" really such a dirty word? Due to financial restrictions, I had to settle on getting a TASCAM 464 [4-track cassette recorder] to base my songwriting studio around. I was using an old Fisher 8-track cassette deck with left and right mic inputs. I would record two live tracks, then mic the tape and add the third, etc.—a little determination goes a long way. So, for me, this is a major upgrade. No laughing, please. What I need to know is, what's the best way to build around this unit and get the most out of it? I would like to record songs of the best quality to pitch out for possible publishing. Nothing fancy, your basic rock format, anywhere from two tracks to ten. I need to record the drums at a separate location, but the rest can be done at my home. Whenever I ask questions about 4-track recording, I get a look like I've worn a Bee Gees shirt to a Metallica show, so I am hoping someone might remember the predigital days and steer me in the right direction. I love your magazine and have been with you since the first issue, so I know if anybody can help me, it's you. Don't worry, as soon as I win the lottery or a Roland truck comes crashing through my house, I will come out of the darkness and walk in the light of the hard-disc world—I promise.

Christopher Scott, Binghamton, N.Y.

We've been bracing ourselves for the flood of pro-tape letters we thought we'd receive in response to our "Hard Disk Rules!" issue, but yours is the winner, Christopher. Anyone who knows how to mic his speakers to bounce three tracks down to two is okay in our book! Congratulations on your upgrade to a 4-track. Many a fine demo has been recorded on a 464, and TASCAM has always been a leader in entry-level multitrack recording (see photo at right for a TASCAM unit you'll want to consider when you're not quite as "restricted"). The best way to use your machine is to concentrate on getting the best drum mix possible before pushing the record button. Bounce only when absolutely necessary, and monitor your record levels diligently. But remember: If you're serious about submitting songs to professionals, you'll be competing with people who have digital equipment and can produce professional recordings

in half the time. Save your pennies and be on the lookout for budget digital gear, some of which now shows up on eBay and on other outlets for pre-owned equipment. You can also find Bee Gees shirts there.

Piece of Cake

Thanks for your June 2001 articles on hard-disk recording ["Reading, Writing, Recording"]. I really liked the comparison of DAW versus PC. I currently use a PC with Cakewalk and a [Echo] Gina soundcard. What would be the best purchase for me so I can record a few tracks of a band and bring them home to dump into Cakewalk? The Mackie HDR24/96 is sweet but heavy—and a little out of my price range. Would a digital portastudio from TASCAM or Roland do the job? How could I sync up the recording from the remote site to what I have in Cakewalk?

Brian Barton

Brian, it all depends on the makeup of the band and how much work you want to do to capture it accurately. Are you miking the band yourself or can you take feeds from the live mixing board? Do you intend to use these tracks as a foundation for overdubs, or simply to mix the band down for a live CD? There are several portable digital recorder/mixer workstations on the market (see the chart on page 34 of the June issue). You have to determine which ones can record enough tracks simultaneously to capture the band the way you want. Then, if you want to transfer all the tracks at once digitally, you'll have to consider upgrading from your Gina, which only has S/PDIF (stereo) capability. With it, you would have to transfer the tracks into your PC two at a time and sync them manually or rerecord the tracks via the card's analog inputs. If, however, your card is a Gina 24, you can transfer eight tracks at once via the unit's ADAT lightpipe connector.

Retakes

In our chart "8/16 Track Hard Disk Digital Recorders," JUNE/01, we inadvertently omitted the TASCAM 788 Digital Portastudio ($1,099), which is an 8-track, 24-bit hard-disk recorder workstation, offering 250 virtual tracks for comps and alternate takes, a 7.5gb internal hard disk for nearly two hours of 8-track recording, built-in high digital effects (reverb, chorus, distortion, and multi-effects), 24-bit uncompressed sonic fidelity, and 24-bit AD/DA converters (see photo above).

TASCAM also informs us that version 2.0 of the software for the company's MX-2424, which we reviewed in June, is now available on the company's web site, *www.tascam.com*.

Send your questions and input to **Feedback, *Home Recording* magazine, 6 E. 32nd St., New York, NY 10016,** or reach us by e-mail at *homerecording@cherrylane.com*. Check out our web site: *www.homerecordingmag.com*

Get The MX-2424 Advantage!

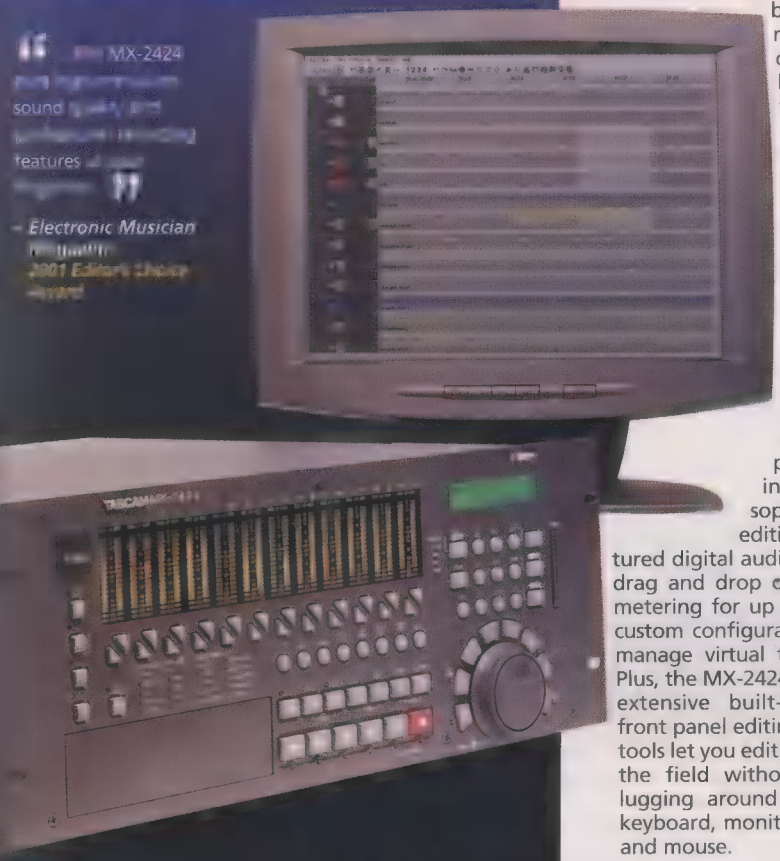
The TASCAM MX-2424 is the most popular 24-track recorder ever made. Whether you're making the transition from analog and tape-based digital recorders or just getting into recording, here's some info to help you truly understand the MX-2424 advantage.

"...'Golden Ears' all ... the TASCAM ... nearly ... a unit ... The ... tests confirmed ... knew: ... is a solid ... at a ..."

– *Glen ...*
... Audio Review Magazine

"... MX-2424 ... sound ... features ..."

– *Electronic Musician*
2001 Editor's Choice ...



Ph.D. in Nuclear Physics Not Required

If you've ever recorded before, you'll find the MX-2424 as easy to use as any multitrack recorder. Since TASCAM has been the world leader in multitrack recording for over 25 years, we know how to create gear that's powerful and sophisticated without making the learning curve too steep.

Edit How *You* Like: MX-View™ Waveform Graphic Interface and Extensive Front Panel Editing

Running in native Mac and PC versions, the upcoming MX-View is a powerful graphic editing interface that offers sophisticated, sample-level editing on par with full-featured digital audio workstations. You can drag and drop on the fly, get onscreen metering for up to six MX-2424s, set up custom configurable keyboard shortcuts, manage virtual tracks and much more. Plus, the MX-2424's extensive built-in front panel editing tools let you edit in the field without lugging around a keyboard, monitor and mouse.

"...the TASCAM MX-2424 is a ... recorder that ... sounds great and is priced right."

– *George Petersen,*
Mix Magazine

"The machine alone is ... to warrant ... attention, but the ... inherent in the control and networking ... make it universally astounding."

– *Rob James,*
Studio Sound Magazine

Sound Designer II & Broadcast Wave Audio Files and SCSI Drives for Ultra Flexible Compatibility

Since the MX-2424 writes Sound Designer II™ audio files to Mac-formatted disks and Broadcast Wave audio files to PC disks, it's easy to move sound back and forth between your computer and the MX-2424. With these standard time-stamped file types and professional SCSI drives, you're ensured of sample accurate compatibility with Pro Tools™, Nuendo™, Digital Performer™ and more. With compatibility being so important to MX-2424 owners, it's no surprise that its 24-channel interfaces are ready to interface with just about any console, digital or analog. Or that its analog, TDIF and AES/EBU interfaces are 96kHz ready.

Back Up Your Tracks: As Low As A Buck Per Song

[illegible]	Cost of Drive	Media/10 Projects	Total Cost
90 Minute IDE Drive	$299	10 Drives	$2990
Orb [illegible]	$299	1 Drive + 86 Disks	$2879
TASCAM DVD-RAM	$599	1 Drive + 20 Disks	$1739
Offline CD-R Backup*	$749	1 Drive + 290 Disks	$959

If you're forced to use cheap disk drives to backup, you'll pay in the long run. DVD-RAM drives may be connected to the MX-2424's front panel or rear SCSI port, and offline CD-R backup via Ethernet transfer to your computer is the most cost-effective backup method available on any HD recorder by far...as low as one dollar for an average pop tune*.

True Recording Power: Take the Punch-In Challenge

The MX-2424's hard disk engine is so strong that it allows for seamless, gapless punches across 24 tracks, with up to 72 tracks of throughput to accomplish this considerable task. If you're brave, try arming 24 tracks on any other standalone 24-track hard disk recorder and quickly punching in and out. It's just one example of the MX-2424's awesome dual-processor recording power, which includes both TapeMode and Non Destructive recording, up to 999 virtual tracks per project with 100 locate points, 100 levels of Undo and much more.

Get the Advantage of the Most Powerful and Most Affordable 24-Track Hard Disk Recorder Available Today

There's much more to the MX-2424 than what fits on this page. So if you're getting into the ... revolution, you might as well take advantage of the recorder with all the advantages. Just go to www.mx2424.com for the complete MX-2424 story, or check out the MX-2424 for yourself at any TASCAM dealer.

MX-2424 24 TRACK, 24 BIT HARD DISK RECORDER/EDITOR

* based on an average 3 1/2 minute song of ... tracks at 24-bit/48kHz. Your mileage may vary.
* Offline CD-R backup is possible with an Ethernet-equipped computer.
The $749 (USD) reference is based on TASCAM's CDR-Pro Bundle.

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Q&A

YOU ASK, WE ANSWER

MIDI, Modem Woes

Q ***First, I've got to say I love your mag. I got a subscription for Christmas, and I look forward to every issue. I have an older Midiman 'Mac Syncman' SMPTE device. I now have a G4. My problem is this: My sync box [has] a serial connection, and my Mac is USB. I have the option of installing a GeeThree Stealth Serial Port card in my modem slot to fix this problem, but then I lose my modem (hey, I'm on a budget!). I have tried a 'Keyspan' Serial to USB adapter, but it will not transmit Midi data. Everyone I talk to says "sell it on E-bay," but I know what a new Midiman SMPTE device [costs]. Any suggestions?***

—Markus, Ontario

Midiman's MIDISport 8x8/s is a MIDI interface/patchbay with USB and traditional serial ports as well as SMPTE. MOTU's Micro Express is a 4x6 USB unit with SMPTE.

A Markus, you should be able to use an external modem with the Stealth. GeeThree (*www.gee3.com*), which makes the Stealth Serial Port, recommends using a USB modem. Certainly, the Stealth's ability to handle MIDI seems to be the perfect solution for your studio needs, and the price is right ($49). Plus, for another ten bucks you can get their Threeport, which will allow you access to three serial devices. Although you'll have to switch it manually, it could come in handy if your Mac Syncman doesn't have a serial "pass-thru."

But you should consider whether you really want to "retro-fit" your new Mac to accommodate older technology. USB ports provide faster and more convenient data transmission, and USB peripherals are becoming more common and less expensive. Midiman's MIDISport 8x8 lists for $499.95 (*www.midiman.com*), but if your needs and budget are more modest, MOTU's Micro Express ($299) is a stripped-down version of the company's MIDI Express with four inputs, six outputs, and SMPTE (*www.motu.com*).

On the other hand, if you're considering leaving your tape-based system behind in the future, your original idea is best. And if you're primarily using your modem for Internet access, consider switching to a high-speed service (if it's available in your area), which will eliminate the need for a modem by using your G4's Ethernet port. A list of other USB-to-serial adapters is available at *www.allusb.com/Products_Adapters_Serial.html*. —*Rusty Cutchin*

More Video Tips

Q ***I enjoyed David Darlington's "The Big Picture" (MAR/01). I am about to write a score for an independent film, and this article pretty much straightened it all out for me. I was just curious about one thing. What are the various formats on which to present the final mix to the director? I know one way Mr. Darlington mentioned is to record everything back to VHS. Would that mean the director would use the audio from the VHS tape itself? Also, if I gave him a DAT or a CD, how would that lock to the edited video? I know he's using Premiere to edit the film, but that's about all I know for now. —Taggart Snyder***

A Taggart, if you and the director were both working in Avid (Pro Tools), then it would be possible to print your "locked" final tracks back to your digital audio sequencer and then just send him the files, which you would store on a few CD-Rs. He could then line up your audio to his cut.

You said your director is working in Premiere, so he would probably rather have audio with separate timecode. This means you have only a few choices. Here in New York, the industry standard is the TASCAM DA format (DA-88 or DA-78-HR for 24 bit). In our case, we stripe the timecode track and then print a locked copy back to the eight audio tracks in four stereo pairs. This allows us to separate the rhythm elements, pads, and melodies so the music supervisor can tweak the mix to suit the dialog and "foley" (natural sound effects). If he puts all eight faders at zero, he hears my mix. As you work together, you can pretty much learn what some directors emphasize and what they trash. (After five seasons providing the music for HBO's *Oz*, most of my mixes make the final show).

Of course, you can also perform this same process with an ADAT or use a DAT machine that has a separate timecode track, but I find most of the world uses Avid or DA-format 8-track tape for delivery. Good luck with your score!

—David Darlington

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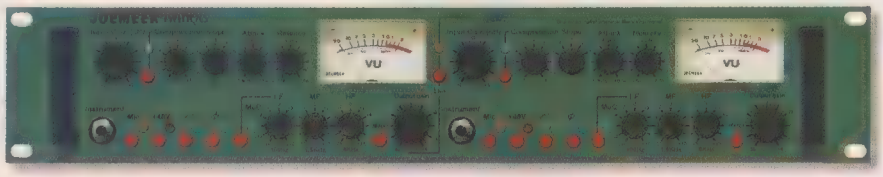
Ambient Noise

Shhh!

WhisperRoom has announced the new SoundWave Deflection System (SDS), designed to convert parallel walls to nonparallel. Reflections and standing waves are controlled by the attachment of panels designed to both redirect and trap sound waves. SDS packages are available for all WhisperRoom SE 2000 models(prices start at $1,500). WhisperRoom has also recently begun offering six new, larger isolation enclosures, size-expansion packages for most of their models, and window deflectors. The new enclosure sizes range from 8.5'x7' to 8.5'x15.5'. ***www.whisperroom.com***

Twice as Meek

Joemeek has released the company's first true dual mono/stereo tracking product, the TwinQ Dual Channel Mic Pre/Compressor. Features include a mic preamp, an optical compressor, a link feature (for sidechain and external control), a three-band classic Meequalizer, a phase reverse switch, a high-pass filter, and dual metering of VU and compression. The TwinQ sports fully floating professional inputs and outputs and 24-bit digital output upgradability with Joemeek's VC1QD digital option card. The CurrentSense mic pre-ensures impedance matching and open circuit shutoff protection, which ensures silence if nothing is connected. ***www.joemeek.net.***



Angelic Interface

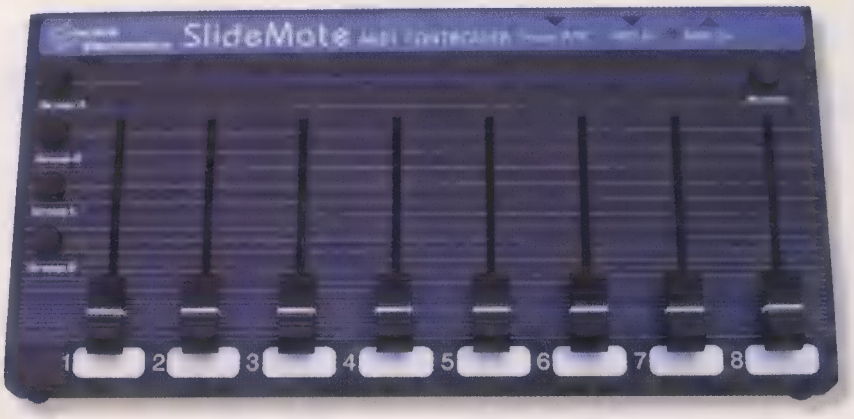
Metric Halo has announced that the initial release of the company's Mobile I/O audio interface will include ADAT-capable I/O hardware. The first models released, the 2882 ($1,495) and the 2882+DSP ($2,195), have been redesigned to incorporate optical connectors. Metric Halo has added lightpipe support. The design of the Mobile I/O is based on an <None>upgradable audio engine that protects users from any future standards changes. The Mobile I/O 2882 line has eight channels of analog input and output, eight channels of lightpipe I/O, and stereo digital I/O with SRC as AES/EBU and S/PDIF. This adds up to 16 simultaneous channels of I/O. It supports all of the standard professional and multimedia sound-driver APIs for both Mac and Windows, including ASIO and native OS drivers. Each input channel offers individual phantom power. Mobile I/O ships with multitrack recording and mixing software. The +DSP units have an extra DSP chip onboard to capitalize on the additional processing power of Metric Halo software and third-party plug-ins. *www.mhlabs.com*

Mass Production

Primera Technology, Inc. has unveiled its new Composer Optical Disc Duplicator ($2,495), which can be configured for either CD-R or DVD-R. Composer duplicates and optionally prints up to 50 discs per job from any Windows-based PC. A "pick-and-place" robotic arm transports discs from an input tray to the integrated CD-R or DVD-R recorder. After recording, the disc can be transported to an optional Primera Technology ink-jet or thermal optical disc printer, where it is printed and then stacked in a 50-disc output tray. Composer's patent-pending picking mechanism is designed specifically for unattended use. Composer comes equipped with either PrimoCD Pro or PrimoDVD mastering and duplication software from Prassi. The software runs on Windows 95/98/NT or Windows 2000. Primera also offers the Conductor Printer Autoloader ($1,495), based on the same disc transport mechanism but with no CD-R or DVD-R recorder. The Conductor automatically loads blank or recorded optical discs into and out of a Primera Technology Signature III or Inscripta printer. ***www.primeratechnology.com***

Slide on Over

Encore Electronics has released the SlideMate ($249), a programmable MIDI controller featuring a total of 120 programmable controls arranged as 15 banks of eight faders. Each one can be assigned to any MIDI channel and programmed to be a SysEx message, a standard controller, or NRPN (or RPN) message. A soft rubber base prevents the unit from moving around while in use. A Scene/Panic button is included. The SlideMate can be programmed from an included Windows or Mac application. Once programmed, the SlideMate will operate without it. The application supports many popular and less common synths. More definitions are being added regularly. They can be downloaded at Encore's website. ***www.encoreelectronics.com***



Power Up

Carvin Corp. has announced the new DCM4000 ($1,099), a four-channel, 4000-watts RMS power amp housed in a three-rackspace enclosure. The unit can be configured to provide four independent 1000-watt or two 2000-watt channels. It provides 1400 watts at eight ohms, and 2000 watts at four ohms when bridged stereo. As a four-channel amp it provides 425 watts at eight ohms, 700 watts at four ohms, and 1000 watts at two ohms. These figures represent continuous RMS, not pulse or peak. It can be used as a multiple monitor amp, because it's designed to be stable for multiple speaker loads. Indicators for bridged mode and signal clipping are included, along with switchable limiters and subsonic filters. ***www.carvin.com***

Sound Thinking

Sound Devices has introduced the new USBPre 1.5 ($695). USBPre 1.5 adds S/PDIF input and output to the USBPre. The company now includes Macintosh Sound Manager drivers. Audio software that communicates with Apple's Sound Manager can use the USBPre as audio input/output hardware. Current USBPre customers can download the Mac driver software from the company's USBPre support site, ***www.usbpre.com.*** The site also includes technical notes regarding USBPre and the Mac OS, plus information on individual software applications. Now included with the USBPre Windows drivers is Microsoft's WDM audio Qfix for USB audio. This file enables 24-bit recording with Windows 98SE systems. Without this fix, recording is limited to 16-bit with Windows 98SE. ***www.sounddevices.com***

SOFTWIRE

The Latest Music, MIDI, and Audio Tools for Your Computer

Sonic Foundry, Inc. has announced the release of ACID PRO 3.0 ($499.95, $349.95 through Sonic Foundry's web site). This latest version of their loop-based music-creation software has added Beatmapper, a patent-pending technology that enables users to create custom remixes of their favorite songs by allowing them to synchronize existing songs with music loops. New features include a Video Scoring Track that allows the user to import video files and score original music to create music beds; a Chopper, for slicing up music loops and rearranging them to create drum rolls, stutters, and DJ-style effects; and MIDI File Support, to import and record MIDI files into ACID projects. MIDI timecode generation and synchronization with external devices is also supported. Additionally, the Sound Forge XP Studio 5.0 digital audio editor provides ACID users with a program to create and record ACID loops and the ability to assign root notes, number of beats, and tempo. Twelve new DirectX Audio Plug-Ins from XFX 2 and XFX 3 include Distortion, Flange, three EQs, and Amplitude Modulation. *www.sonicfoundry.com.*

Sonic Foundry's ACID PRO 3.0

FXpansion Audio has announced the availability of the third generation of VST to DirectX plug-in adapters, VST-DX Adapter 3.0 ($60.00.) This latest version offers full support for the DXi system, used by Cakewalk's new SONAR platform, which allows seamless and transparent use of VST Instruments as DXi Instruments, with no added latency or loss of timing accuracy. The v3.0 adapters allow you to install VST plug-ins directly into your applications' DirectX menus, without any intermediate control panel. VST plug-ins now behave as if they were DX in every respect. Microsoft's new DX8.0 automation spec is fully supported, allowing sample-accurate automation of all plug-in parameters in suitably enabled host applications. *www.fxpansion.com*

Dartech's Dart CD-Recorder 4.1

Dartech, Inc. has introduced an updated version of the Dart CD-Recorder, Version 4.1 ($49.95), which handles more audio formats and provides some new features. The latest version introduces support for Microsoft Windows Media format (high compression WMA files); an Encode command that makes file conversion easier; an improved MP3 Decoder that is cleaner and easier to use; proprietary Producer tools that manipulate MP3 files and restore old records and tapes; an expanded Unpack function to separate long MP3 files into discrete tracks; Joliet support to burn MP3, WAV, and WMA to CD-ROM; Comparative Normalize, which allows automatic volume setting across all files on a disc; and multisession CD writing ability with a Close CD option. The Dart CD-Recorder records from any source, burns quality audio CDs with easy drag-and-drop playlist building, and includes a CD and jewelcase labeling program. Dart also provides updates to Version 4.1 free to Version 4.0 owners. A trial version is now available for download. *www.dartpro.com.*

Keyfax Software, a producer of MIDI Samples, has announced its first Digital Delivery collection, Drums Around the World ($14.95), which is now available exclusively from the Keyfax website. Drums Around the World is a 100-groove collection of real drummer–played beats from Cuba, Japan, Mexico, Brazil, and Senegal. The CD includes 10 individual two-bar grooves from each country, including Taiko grooves, Djembe beats, classic bossa novas, salsa, reggae, and much more. The grooves are all saved as MIDI files mapped to GM in both Type 1 and Type 0 formats. *www.keyfax.com.*

NTONYX has announced DrumWalker 1.4 ($59), a MIDI FX plug-in (for Cakewalk software) that can convert a standard MIDI track into a Sonic Foundry Vegas Drums project. By selecting a drum track in Cakewalk and launching DrumWalker, you can very easily assign your .WAV files (up to three mb in size) as samples to each drum, and launch Vegas. In Vegas, the result is a separate track for each individual drum and separate clips for each drum stroke, where the loudness of a clip is calculated individually on the basis of the velocity parameter. DrumWalker makes it possible to define settings that can be used in the Vegas project, including control of the Sample dynamics and Pitch Shift in the range of -12 to +12 semitones for each drum. Each Vegas track can be processed by DirectX Plug-ins and later mixed down by Vegas into a stereo .WAV file. Sonic Foundry Vegas, in combination with DrumWalker 1.4, can be used as both multichannel mixdown software and drum sampler. *www.ntonyx.com.*

SonicEmulations is now shipping TOPAZ Studio Kits, Volume One ($99). It will be initially offered in GigaSampler format, with support for other popular formats currently in development for release later this year. With eight complete virtual-instrument drum kits ranging from rock to rap to jazz, SonicEmulations is offering a complete "live studio drum" solution for the GigaSampler user. *www.sonicemulations.com.* HR

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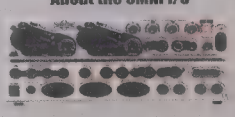

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Tips & Tricks

SESSION SECRETS

Forward Thinking Backward Reverb

A classic trick that has been used countless times by artists such as Led Zeppelin, Pink Floyd, Jimi Hendrix, and many more, is also often used in scary movies, when somebody is talking with spirits or when the sound designer needs to create a voice that sounds "possessed." Reverb is recorded so that it swells into the vocal track before every word, creating a very eerie effect. Here's how it was accomplished with 24-track analog tape and the newer digital alternative.

At the end of the song or section of dialog, the tape was flipped over. A long decay time would be set on a classic plate reverb. The lead vocal track was fed into the reverb and the reverb return was recorded onto a blank track on the tape. (Of course, because the tape was "upside down," the tracks were now reversed: Track one became track 24, two became 23, and so on.) When the recording was done, the tape was flipped back over. The effect wouldn't work in all places, but it would be really dramatic on certain words.

Often a flanger was then patched across the reverb for additional effect. The effect also worked well with other instruments. If you're still working with analog tape, try it. (On some 8-tracks, the head alignment might be off when turning the tape over, which would seriously deteriorate signal strength. On the other hand, the effect might even be spookier!)

Of course, most people don't have reels to flip anymore. But one can achieve the same effect with digital audio software, even if the process is a bit more complicated.

1. **Copy your lead vocal track onto another blank track.**
2. **Select a range longer than the soundbite itself, to edit and remember it. Make sure you leave a few blank bars both at the beginning and the end of your vocal.**
3. **Using a plug-in or editing feature, reverse the track.**
4. **Insert a reverb plug-in on the reversed track.**
5. **Set the reverb to a long hall or plate sound with about a 3.0 decay time. Set the mix or balance to fully wet. (All you want is the reverb return, not the mix of the vocal and reverb return.)**
6. **Bounce the track to disk.**
7. **After bouncing to disk, remove the reverb plug-in from the insert.**
8. **Select the track with the same range that you had selected before.**
9. **Reverse the track.**
10. **Mix it with the lead vocal track and use the parts that sound good (usually right before the actual singing).**
11. **Try a phaser or flanger patch inserted on the backwards reverb.**

The same process was also used with delay. (On Led Zeppelin's "Whole Lotta Love," check out the vocal break: "Woman, you *neeeed* me.) Just set your delay to 1/4- or 1/2-note, and you're set. —Arty Skye

SysEx-FX

One way to get more use out of simple effects devices is to use the often-overlooked MIDI capabilities of the effects unit. By recording the SysEx data and/or program changes into your sequencer, you can make one effects unit do the job of several. This works best if you can automate the audio signal you're sending to the unit, but you can still achieve the goal without the automation.

The object here is to use the effect on one sound, then switch to a different effect later. For example: The intro to the song starts and you send the vocal to a nice flange patch on the effects unit. Later in the first verse you send the snare to the same unit for one explosive verb effect (you'll need to program a patch change to select a huge reverb via your sequencer). At the end of the first chorus, you send the guitar lead into the unit to access a long digital delay, which changes its feedback level for only the last note. See the possibilities?

Connect the effects unit to your sequencer via MIDI just like you would any other piece of MIDI gear. Set the MIDI channel correctly and make sure it's sending and receiving, etc. Check the manual of the specific effects unit to make sure you understand its MIDI capabilities. (Some units like the Eventide H series make it easy to send SysEx info in real time and then play it back.)

Now as you listen to your song, think of the little bits of ear candy you would like to use and try them out at the proper times in the song. Then insert the program changes into your sequence track at the right points. If you've modified any of the patches, save them to new patch locations and alter the program changes accordingly. If your audio signal can be automated, you can redirect the source audio through the unit at exactly the right time. If not, just manually twist the audio channel's aux send knob when you want to hit the effect. (Congratulations, your fingers still work!) —AS

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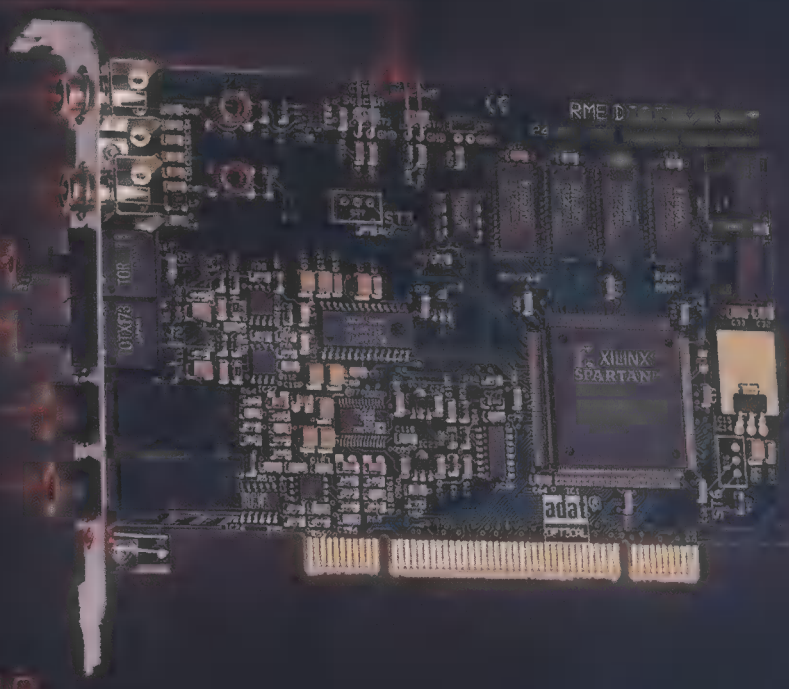

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Akai's S-Series Samplers
THE S3000XL

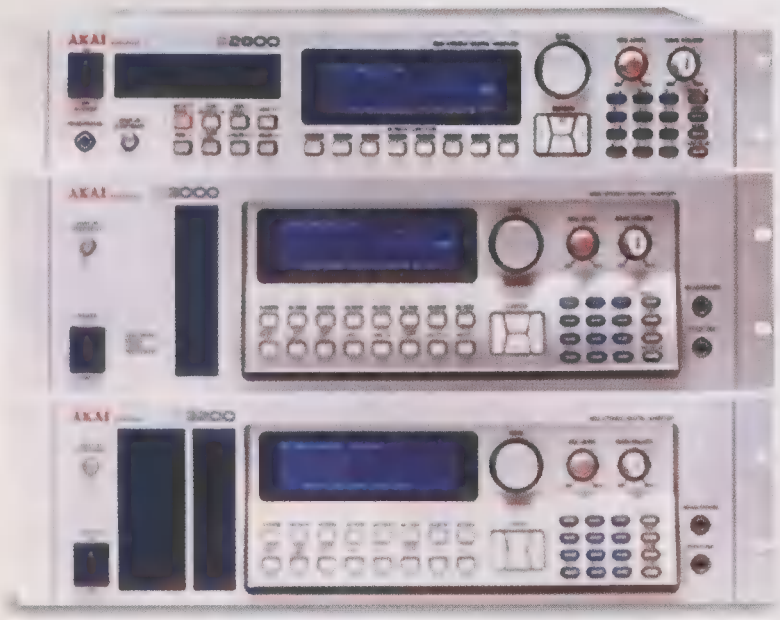
By David Darlington

Akai's S2000/S3000 series includes the CD3000 and the S3200 and S3000XL models—some of the most popular samplers ever built. They can be found in numerous pro and project studios throughout the world, as well as in the MIDI setups of many touring acts. Here is a quick primer on how to get around one of these boxes in order to sample quickly. We'll use the S3000XL as our basic model.

Loading

The front panel is laid out in three sections. To the left are eight master menu-page keys, which control the overall menu selection. Once you select a menu, you access the submenus through the "soft" or Function keys underneath the backlit display. Alphanumeric info is entered with the keypad on the right, which also contains the Name key and the Enter key. Samples can be played individually, but most often they are arranged in a Program, which is assigned a specific MIDI channel and audio output. Programs can then be collected into a Multi, which is Akai-speak for performance setup.

Samples can be loaded from hard disk or floppy disk by pushing the Load button, scrolling the cursor to the top of the page, and selecting floppy or hard disk. There is also a Flash RAM option that keeps samples readily available without disks. Hint: If the display indicates your hard drive is "not ready," check the SCSI ID number by pressing the soft key marked SCSI. Here you will find the ID select for the drive, as well as the sampler itself.



On the Load page, you are presented with choices of data (i.e., samples, programs, multis, or just single items). Select your choice by moving the cursor over this field and turning the data wheel. Another option here is to keep what is already in the sampler's memory or delete it. If you select function key 7, or CLR, you will clear the current RAM and load the selected data. Function key 8, marked Go, simply appends the new data to that already in memory.

Sampling

Another way to get samples into memory is to record your own. This is achieved, logically enough, in the Sample menu. By pressing soft key 2 (marked REC), you access the recording.

Once the sample is recorded, it can be trimmed, or truncated, by accessing the Edit menu. The Sample menu button will stay lit when you press Edit, indicating you are editing a sample, not a Multi or Program. Hit soft key 2, marked TRIM, and a

CONTINUED ON PAGE 71

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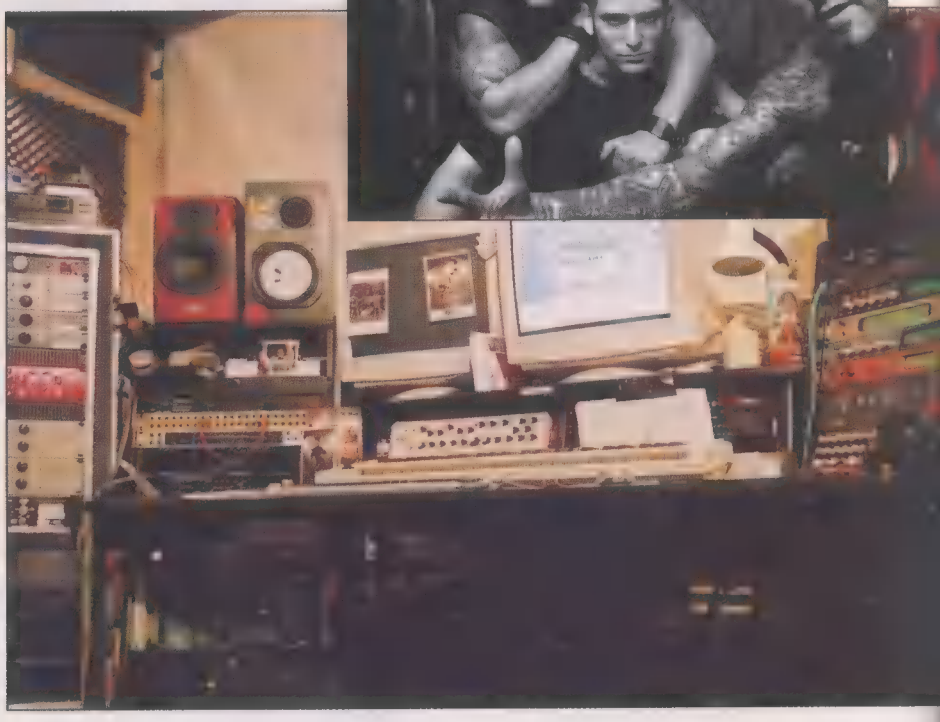


by Jeff Perlah

"We'd be recording or jamming, and they would look at us like, 'What the hell you doin' in my studio, bitch?'" Singer/bassist Evan Seinfeld of Biohazard speaks about the huge, hungry rats that used to reside in the group's home studio, located under the Manhattan Bridge in a gritty part of Brooklyn called DUMBO (down under the Manhattan Bridge overpass). Eventually, the squealing critters in the fittingly named Rat Piss Studio pushed Biohazard over the edge. So Seinfeld (who also plays the role of a prison inmate in HBO's *Oz* series) and his bandmates plugged up holes and enlisted a ten-pack of Enforcer traps (the group even considered naming one of their records *10-Pack Enforcer*). "It was a long war, a ground war, but we emerged victorious," Seinfeld is happy to report.

Rat Piss Studio is the brainchild of Biohazard's guitarist/vocalist Billy Graziadei and drummer Danny Schuler. The hardcore/metal/hip-hop group began using the former warehouse to store equipment in 1995 and started recording in it about three years ago. "Before we found this place, we used to pay rent at storage places—three, four hundred buck a month—and we would rehearse at various studios around the neighborhood," Graziadei reports.

Over the years, the group has sectioned off a live room, a control room, and a lounge for chillin'—yet there hasn't been much time for that lately, while Biohazard has been finishing their latest CD, *Uncivilization* (Sanctuary). The powerful bridging of heavy music styles features a slew of guests, including Sen Dog of Cypress Hill (the track he raps on, "Last Man Standing," was produced by JIVEjones, whose other credits include P.M. Dawn and Mandy Moore), Phil Anselmo of Pantera, and members of Sepultura, Slipknot, and Hatebreed.

Just after Biohazard mastered the album, Seinfeld and Graziadei dished out the details on Rat Piss Studio.

HR: What has changed about your recording process now that you're working here?

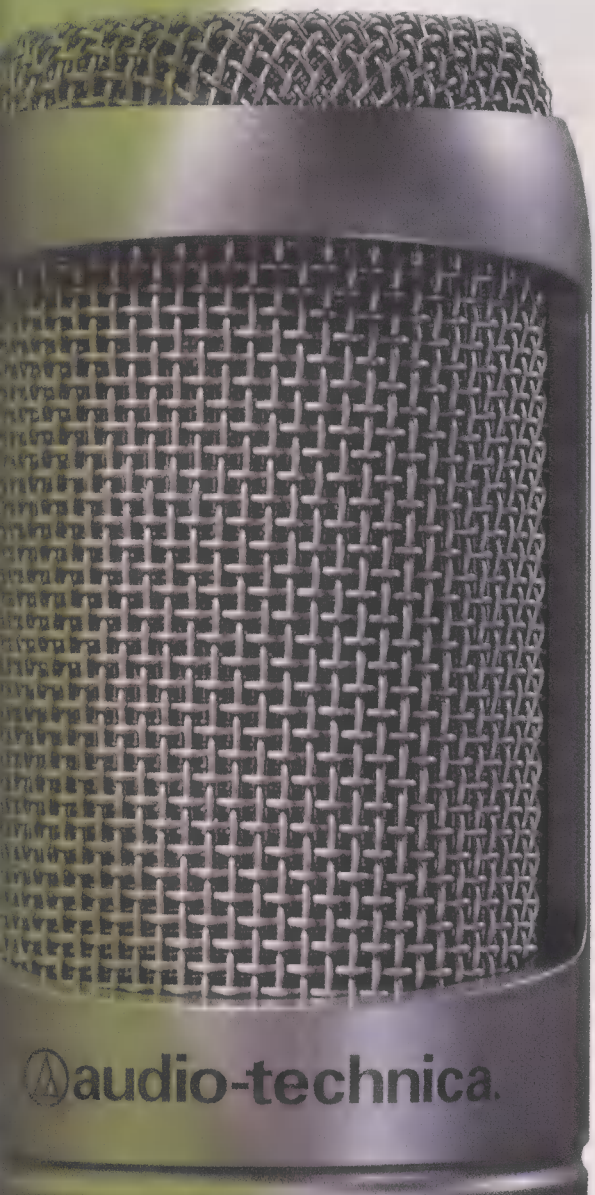
Graziadei: We used to run ADATs while doing our demos, and then we would go to studios and pay about $2,000-a-day lockout. So we invested, moving up to Pro Tools. I'm running a Mix Plus system with an extra Farm card on a G4. We did the new record on Version 5.01. We just finished mastering the record at 3 a.m., and it's been the most incredible and the most horrible experience of my life. We always produced ourselves over the years, but there was always [another producer] driving the truck, like Ed Stasium or Dave Jerden. This time around, we have to consider everything from mic placement at the kick drum, to where we want to place an extra room mic, like behind the drummer. This time it was all on our own shoulders.

And to be honest, I've been working on this record my whole life. I feel like it's a full representation of what Biohazard is, because we were able to do it ourselves at our own place. And with the technology that's out there these days, it was possible. And it's amazing not having some studio owner breathing down your neck. You can be like "let me take a break and go and chill." "Oh shit, I spilled coffee." Who cares? It's your floor. To be honest, we'll never do it any other way.

And also, Danny and I have versions of Pro Tools—the Digi 001 system—in our [real] homes, so we'll work back and forth with burned data discs or just transfer the Glyph hard drives. With Pro Tools, as far as demos go, you can easily have ten different versions of a song in an hour. I've also taken the Digi 001 System on the road. I went to Philly and

LEFT: GABOR STIBINGER; TOP RIGHT: COURTESY OF BIOHAZARD

make it happen.



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A Dan Alexander Neve pre-amps, Focusrite Red EQ, (2) Anthony Dimario Tube Compressors, dbx 160, Digidesign 888, Anthony Dimario Direct Box
B Yamaha NS-10s, Tannoy monitors, tuner, Glyph desktop hotswap, Glyph trip rack with 1 hotswap bay, 1 fixed 36 GB hard drive, CD burner, Mac G4 with Sample Cell II plus, and 7-slot expansion bay, Sherman Filter Bank, Lexiverb, Alesis QuadraVerb, Roland FX Unit, Korg Kaos pad
C MOTU MIDI Express, E-mu Proteus 2000, Korg Trinity Rack, E-mu Audity, E-mu Orbit, Waldolf Pulse, line mixer

did some tracks with Sepultura. And I met up with Phil [Anselmo] when Pantera was on tour. We did a track with him in his dressing room and took it back to our studio.

Seinfeld: I think having our studio helped to make the recording [of *Uncivilization*] feel a lot more natural. In the past, we'd go to these big fancy studios and feel this pressure to do everything fast and perfect; [considering] time is money. This time we had the opportunity to change ideas a million times if we wanted to. "What if we moved the chorus and put the bridge there and made the chorus twice as long?" You can just cut and paste shit, it's incredible. For a guy who's totally a non-tech-head—I'm almost techno-phobic—it was really easy to be creative.

Billy and Danny are very technical, and nobody understands what I'm trying to say [as a musician] better than those guys, and they were able to learn how to work this equipment in a very short period of time. The result is that our album sounds pro. And I can now see myself totally learning how to do some of this. I'll probably get a Digi 001 system for my house, so I can record my ideas. I write music all the time and have no way to record it.

HR: How do you think the home studio affected the way you performed on the new album?

Seinfeld: For me personally, I'm comfortable anywhere. But it was cool just to be "at home." I didn't have to move my gear. It's our studio. If the phone rang, it's our phone.

HR: What kind of mics did you use for singing, Evan?

Seinfeld: A big variety; really good ones, really cheap ones. Some [Shure SM-] 57s and 58s. We have some [Marshall] MXL microphones. I sing on an [EV] RE-20 sometimes, which is getting fixed because [we] broke it during the recording.

HR: What sort of bass gear did you use?

Seinfeld: I have some custom-made Foderas, made in Brooklyn by Vinnie Fodera and Joey Lauricella; I have four of them. I also have some five-string Music Mans, but I used mostly Foderas [on *Uncivilization*]. I'm playing into a variety of amps, including an Ampeg B15, a couple of [Ampeg] SVTs, and a Mesa/Boogie bass M2000, which is my favorite bass head. And I'm using a Line 6 Bass Pod Pro, which is probably the greatest bass invention for home recording ever.

HR: Why?

Seinfeld: Because I can record the sounds of various amps without setting them up. It's very versatile. Honestly, I fooled myself. I A/B'd the sound of an amp and the Line 6 and I would get 'em confused. HR

LEFT: GABOR; ABOVE: PAUL DONIO

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—Roger Nichols, EQ Magazine

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Normally we don't name competitors in our ads. But in this case, Mix Magazine published the other nominees for the 1999 TEC Award for Outstanding Technical Achievement in Small Format Consoles: Allen & Heath's GS-3000, Digidesign's ProControl, Panasonic's WR-DA7, Spirit's Digital 328 and Yamaha's 01V. Thanks to all who helped us win this prestigious award.

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Sigma Sound PHILADELPHIA

by David Simons

We're standing in the control room of Studio 1 inside Philadelphia's Sigma Sound Services—ground zero for nearly every major R&B record made during the 1970s—while veteran producer Weldon McDougal prepares a new track cut just days earlier by local R&B artist Shirley Slaughter. Though the sound is modern, the song has a history: Cowritten by McDougal, "Yes, I'm Ready" helped launch the career of another Philadelphia native, teen singer Barbara Mason, way back in 1965. "It almost never happened," remembers McDougal. "She had a tantrum, sang it once, and stormed out. Lucky for us, it was good enough."

Not only did "Yes, I'm Ready" hit the Top Five, but with its silky strings and smooth backing vocals, Mason's one-shot laid the blueprint for an entire generation of Philly-based soulsters who would dominate the music world in the years that followed. Beginning in 1968, much of the magic would emanate from the recording room at Sigma Sound, a simple three-story structure located at the corner of North 12th and Race Street, adjacent to the Philadelphia Convention Center.

A mix for the 1976 Lou Rawls hit, "You'll Never Find Another Love Like Mine." Left to right: engineer Joe Tarsia, cowriter Leon Huff, Rawls, cowriter Kenny Gamble.

It was at Sigma that producer Thom Bell mastered early romance classics like the Delfonics' "Didn't I (Blow Your Mind This Time)" and "La-La-Means I Love You," before teaming with producers Kenny Gamble and Leon Huff—two of the greatest musical minds of the century—for a string of legendary R&B hits, including Harold Melvin and the Blue Notes' "If You Don't Know Me By Now," the O'Jays' "For the Love of Money," and many others.

Though the sound of Sigma was, with a few notable exceptions, black and urban, its studio personnel was a cross-section of Philly's black, white, Jewish, and Italian populations. Sigma's owner is Joe Tarsia, a monumental figure in Philadelphia's musical history who got his foothold in the business purely by accident. While working as a television and radio repairman for the Philco Corporation during the late '50s, Tarsia was asked to fix a tape recorder at a local studio. "I went down to do the job," says Tarsia, "and never left."

His timing couldn't have been better. "Dick Clark had just launched 'American Bandstand' from Philadelphia," notes Tarsia, "which created a huge window of opportunity for the regional music scene." Suddenly, locals like Chubby Checker, the Orlons, and the Dovells were going global with hits recorded at the tiny studios that laced Philly's downtown area.

One such facility was Rec-O-Art—the future site of Sigma Sound—where Tarsia began honing his engineering skills. "The control room was puny, the recording room wasn't much bigger," recalls Tarsia. "And we only cut in mono. But put on the Dovells' 'You Can't Sit Down.' What a sound."

Tarsia eventually took on a permanent engineering slot at the South Broad Street studio of Cameo-Parkway, one of the hottest R&B labels of the time. "Still, I was giving up the financial security of my Philco job—and no one in my family was too keen on that," says Tarsia. "Especially after Dick Clark left, and that window closed right up. But then along came Kenny and Leon—and another fire got started."

Almost immediately, the Tarsia-Gamble-Huff team clicked with the Soul Survivors' fall 1967 smash "Expressway to Your Heart." When Cameo was purchased by music mogul Allen Klein that same year, Tarsia decided to strike out on his own. In 1968, Tarsia occupied the second floor of the former Rec-O-Art building and began making preparations for his new facility. "I wanted a real identifiable name, something like Gold Star, which I loved," says Tarsia. "One day I was sitting in a Greek restaurant, and there was a placemat with the Greek alphabet on it. And there it was."

From the outside, Sigma's brick facade exuded old-world charm; inside, Tarsia's technical

LEFT: WELDON A. MCDOUGAL III; ABOVE RIGHT: D. SIMONS

demands kept the facility at the front of the pack. "When I first opened this place, I went out and bought a Scully 8-track and 4-track and installed them both in one big wide Electrodyne console, with Altec 604s for playback," says Tarsia. "Later we had three different automated outboard systems that would allow you to mute, group, and do rides. I would venture to say that we were the first studio in the world to have a successful automation system. You look at the actual building and you'd never guess—the rooms were small, there's an air conditioner hanging out the window—but when it came to equipment, we were always trying to push the envelope."

While the studios of Motown, Memphis, and Muscle Shoals helped define the sound of black America, Sigma was the first to make that sound huge. Not that it took a ton of real estate: Tarsia built his tracks in a recording room that was barely 40 feet by 20 feet.


Still [illegible] Sigma Sound today

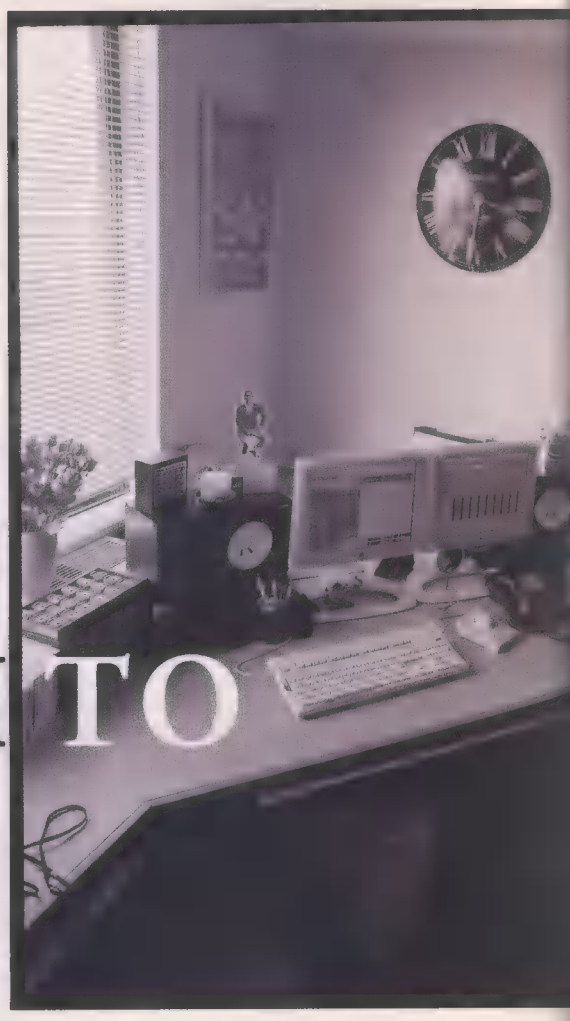
"And we had a lot of musicians in there—upwards of 30 per session," recalls the engineer. "As a result, the instruments were always talking into each other's microphones. But I loved that—because you'd always get something unexpected. One of my favorite sessions was for 'Didn't I (Blow Your Mind This Time).' As usual, we were recording the backing track live, and we had the drums miked up a certain way. But the second we opened up the strings' microphones, the whole character of the drum sound changed. Thom Bell wasn't so sure, but I knew it would be great. So I started doing stuff like that on purpose. Sometimes during the mixing process, I'd set up a pair of mics in the studio, then turn on the studio monitors and feed the track into the studio and weave some of that back into the mix. Or just hang a couple extra mics way back in the room during a strings session, just to try to get some of the room ambience and make it sound like it was a real live date."

For extra dimension, Tarsia made the most of Sigma's 40-foot long, six-foot wide echo chamber ("a really sweet room") as well as its coveted EMT plates. "I always loved the old CBS recordings, because they were one of the first to use a tape recorder in front of an echo chamber," says Tarsia. "And that became standard operating procedure at Sigma—we always had a machine running at 15 IPS in front of our EMT. It sounded fantastic on those strings—listen to 'Me and Mrs. Jones' or 'Back Stabbers'—but you don't want a delay on everything, so I'd have a direct feed set up as well that I could switch to when necessary. Also, my hearing always lacked for high end—which meant I'd accentuate the upper frequencies, especially on the echo EQ. It's really what gave those records that identifiable sound."

Over the years, Sigma continued to serve an increasingly diverse roster of artists, from rockers like Todd Rundgren (himself a Philadelphia native) to alt-popsters Talking Heads, whose '80s staples *Remain in Light* and *Little Creatures* were born at the corner of Race and North 12th. Today, R&B movers like Erykah Badu flock to Sigma for its signature sound—even if it's not quite the way it used to be.

"These days anyone can make a great-sounding record all by themselves. As a result, recording is often more about building tracks than creative collaboration," says Tarsia. "Progress is progress and nobody rides a horse to work anymore—but the thing that music has lost is the energy and emotion that only occurs when you have a group of musicians playing together. I mean, when that rhythm section first locked on 'Didn't I (Blow Your Mind This Time),' the hair on my arms stood up. That just doesn't happen with one person and one machine." HR

The David Letterman show bassist builds a *serious* project studio in a 9x9 bedroom—welcome to Doctor Tong's Evil House of Waffles



BEDROOM TO

Those who have only lately discovered "The Late Show with David Letterman" might be surprised to learn that the bouncing, boyish-looking bassist in the house band has been with the show since its inception almost two decades ago. Even more astonishing is the fact that when Will Lee signed on with Dave, he already had a decade under his belt as one of the top session cats in New York.

His jazz-pianist father and former-big-band-singer mother, combined with early piano, trumpet, and French horn lessons, helped kick-start the young Will's musical development. Later his skills would be honed by listening to and studying the artists he loved—the Beatles, Stevie Wonder, Jimi Hendrix, Steve Miller, the Rascals, Motown, Sly & the Family Stone—and by gigging six sets a night with various local bands in Miami.

After a brief flirtation with drums, Lee settled on bass as his instrument and quickly thereafter developed into a multi-style virtuoso. Word of his talent quickly spread to New York City. The young sax great Randy Brecker asked him to join guitarist John Abercrombie and drummer Billy Cobham in a group called Dreams—a jazz/rock horn band on the order of Chicago and Blood Sweat & Tears. Once in Manhattan, Lee began building his massive resume by landing sessions with everyone from Steeley Dan to Sinatra and Cat Stevens to Barbra Streisand *(See sidebar: Where There's a Will).*

A hard day of sessioneering on both bass and vocals was often followed by rocking out in the clubs with the 24th Street Band, which consisted of studio cohorts Steve Jordan, Hiram Bullock, and Cliff Carter. Longtime fans will recognize this group as the band (sans Carter) that a certain musical director shanghaied to become Paul Shaffer and the CBS Orchestra on the original "Late Night with David Letterman."

Studio in the Sky

Entering Will Lee's home studio, located in the second bedroom of his 33rd floor apartment in lower Manhattan, you're immediately struck by the magnificent view afforded by a large window behind his workstation. The sound of Beatles outtakes and alternate tracks fills the room as Lee prepares for a gig with his Beatles band, the Fab Faux. The studio has an enormous amount of equipment, thoughtfully arranged with a minimum of clutter in this relatively small space. With the help of designer/builder Liam McGrath, Lee structured the room vertically (like Manhattan) to accommodate computers, hardware, outboard gear, basses, CDs, cables, and accessories.

A home studio may seem like a busman's holiday for someone like Lee, who spends his life in recording studios, so the first question seems obvious: Why? "The main function of this studio was originally to be compatible with other people that I work with or artists that I produce, like

By Michael Ross

Photos By
Nelson Kwok

PRO

WILL LEE'S HOME STUDIO

> "Because engineers would love the tube thing, what I used to do in the studio was request a dummy track off of a direct box, so I could hear what I was doing now and they could enjoy what I was doing later. I loved the instant attack of solid state."

[session guitarist] John Tropea or [keyboard player] Mike Catalano. I've always had some kind of studio; for years I had a studio on West Broadway that was larger in size so that I was able to have a 2" Studer A-80—which is for sale, by the way."

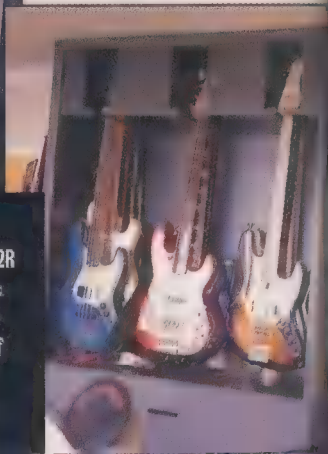
Lee has placed the Studer on the block because landlord shenanigans forced him to abandon his home of 22 years for a smaller apartment, not because he feels that tape is dead. "I would probably still use it, but I don't have the room in this shrunken version of the pad I used to live in (the loft was 2,500 square feet, the apartment is 1,100 square feet), so I had to get practical with what I could do," he says. "The other studio had everything: It was a rehearsal studio, a recording studio, and a writing studio, but it got confusing to me technically, and I am not the kind of person who wants to make technical decisions to begin with; I want to be the guy making musical decisions. So honestly, at the time of this interview, if I exaggerate a little, I could say that there is silence in this studio until an engineer comes over. If I want to do anything for real, I have to hire a guy. It's not a bad thing, but it's hard to be spontaneous that way. For that reason, I am going to be taking private [Emagic] Logic lessons. I've had it for years and it's mind-boggling. I've learned a little bit here and there at each session, but I would like to be able to do it all by myself if I get an inspiration."

Will's choice of Logic once again speaks to his desire for compatibility with the people with whom he works most. "Most of my friends have Logic and are doing ProTools simultaneously on the side. I could see that coming, so it was: Here's what I have room for and here's what I can afford, and here are the guys that I want to trade files with. So that's what I ended up doing: a [TASCAM]DA-88/Logic studio with ProTools."

Though he has yet to produce a complete project from tracks to mastering there, his home studio has already hosted a variety of sessions for works-in-progress. "Sometimes we do the [Roland] V-drums here and then replace them with live drums in a big studio if the budget allows, but a lot of times it ends up being both. We've done final vocals for Mike Catalano, Chuck Loeb, and Carmen Questa here. We recently did a track with Yankee baseball player Bernie Williams for a record called *Big League Rocks*, where a lot of baseball players are featured doing whatever they can do. Bernie came over and played beautiful guitar, and we wrote a song together. We used the V-Drums." Lee has no problem with the V-Drum sounds. "I love samples—I formed a whole company of my own (Sample Heads) just so I could have a good bass sample and other samples."

Next up for Lee is a project that is close to home in more than a geographic sense. "I just did an album with my father—a bebop record of all Charlie Parker tunes, a total jazz record." The tracks were done at Livewire Studios, where a great piano was available for the elder Lee, but the junior Will plans to finish the record at the apartment. A jazz mix being simpler than your average pop mix, Will Lee IV feels that working on Will Lee III's record is a good way to ease his way into the depths of Logic's versatile yet complex software. With the help of engineer Chris Arbisi, he plans to hone his recording chops to become more proficient with his wealth of equipment: "I had everything transferred onto 20 discs worth of Logic. I will edit them and mix them here as part of my tutorial. A lot of really amazing records are being made in just Logic audio."

With a career spanning three decades, Will Lee has seen the sea change in recording technology up close and personal and has a unique perspective on both the science and the social aspects of the digital revolution. "My story is, I've been in New York since 1971 and I've done, like, maybe 1,200 albums and thousands and thousands of commercials. Back in the 70s and 80s, there was a scene. There were only about six to ten major studios doing all the stuff, so you would walk into a session, see a whole bunch of human beings, and you would play together to make this 'thing,'



Will Lee's studio is an excellent example of how to make the most of a small space. A wraparound corner workstation gives him plenty of desk space for writing, as well as surfaces for his Yamaha 02R digital mixer and NS-10M monitors. Two flatscreen displays are driven by his G3-updated Power Mac clone, which is configured for Emagic's Logic Audio. Two 16-space racks house TASCAM DA-88 tape machines and a single Pro Tools 888 interface. A floor-to-ceiling vertical rack holds a wide range of effects, dynamics, and sound modules—with plenty of room left over for Roland's V-Drum kit and Lee's custom-made home rack, which holds nine (at last count) of his many axes.

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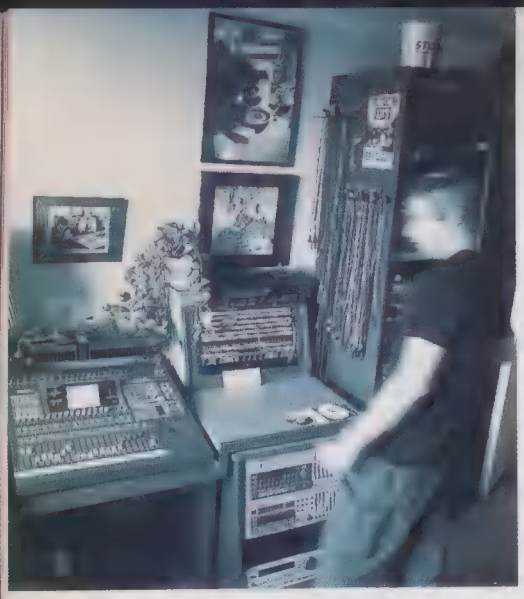

and do that—in my case—five to eight times a day sometimes. The fact that there was this scene created a need for another in-between scene; so there were specific bars that people would hang out in between sessions. There was a great environment in New York dictated by the technology of the times. Now there are only three or four major studios left and, like, 2,000 [home] studios that do all that stuff. It is so spread out that there is no special scene. So you have to work with whatever is available to you—I have my special scene in my studio in the second bedroom that I call 'Doctor Tong's Evil House of Waffles'."

The Lure of Pre Tec

You would think that with all those sessions, Lee would have learned many tricks for getting good sounds, but it didn't work quite that way. "I didn't learn that much about the recording end until I became a producer myself and did more hands-on stuff. I used to be like, 'Get me a sound!' I wasn't that involved with it—I was much more into the music. These days I am more involved in trying to make the bass sound as special as possible—not just notes, but some kind of personality in the sound. I've been digging more tube sounds, which I never used to like. Being originally a drummer and a funk player at heart, I kind of liked the note to come out at the same time that I was playing instead of later that week. Because engineers would love the tube thing, what I used to do in the studio was request a dummy track off of a direct box, so I could hear what I was doing now and they could enjoy what I was doing later. I loved the instant attack of solid state."

Time has apparently changed Lee's attitude toward tube latency. "Now I am more into the beauty of the sound. Now when I go into the studio, I take a Demeter Tube Direct box that I plug into a Tube-Tech Mic pre, and I'm really digging it. I think being in the Beatle band has helped."

The Beatle band of record features Will, Conan O'Brien guitarist Jimmy Vivino, and three cohorts performing the legendary Liverpudlians' material under the name the Fab Faux. By virtue of the fact that they have five members, all of whom sing and four that double on guitars and keyboards, they are able to (with the occasional augmentation of samples recorded chez Lee, horn sections, and cellists) perform letter-perfect renditions of tunes from the Beatle canon that look-alike quartets and even the originals could never assay live. A typical show might see them doing the entire *Abbey Road* album—in song order. Or, whipping out ditties like "Savoy Truffle" and "For the Benefit of Mister Kite."

There is a CD planned that will not be comprised of Beatle tunes but, rather, "inspired on a sound level by Beatles—the tube technology." Lee hopes it will be "sonically pleasing in the way that we were sonically pleased by Beatle records." In terms of recording, he says that what he got from Beatles records was "getting back into miking an amp—using an amp to begin with. As a studio musician, it is so rare for me to do that—I am so used to plugging right in to the board and bypassing the whole acoustic part of recording electric bass. This inspires me to record the amp and use flatwound strings and a pick. We are mixing two or three different bass signals together to get the sound. The startling thing about Beatles recordings from '65 and later is that they recorded the bass last and mixed it the loudest—like 2db louder than anything else."

As one of the world's most recorded bass players, does Lee have any final words on getting a great bass sound in the studio? "It is so much in the hands; if you can do anything to get that on tape, that is all there is to do. I used to joke with the engineers when they used to say, 'It's time to get a sound.' I would say, 'What do you mean? I am a sound.'" Anyone who has heard Will Lee live or on record would have to agree. HR

Where There's A Will

A SELECTED DISCOGRAPHY

Joan Armatrading	*Me Myself I*
George Benson	*Love Remembers*
The Brecker Brothers	*The Brecker Bros.*
James Brown	*Get Up Offa That Thing*
Gary Burton	*Cool Nights*
Mariah Carey	*Emotions*
Cher	*Cher*
Chorus Line	*Soundtrack*
D'Angelo	*Brown Sugar*
Dr. John	*City Lights*
Maynard Ferguson	*Conquistador*
Roberta Flack	*Blue Lights in the Basement*
Aretha Franklin	*A Tribute to Curtis Mayfield*
Mayfield	
Al Green	*Don't Look Back*
Billy Joel	*Greatest Hits volume III*
Chaka Khan	*Chaka*
Barry Manilow	*Barry*
Pat Metheny	*Secret Story*
Bette Midler	*Thighs and Whispers*
Laura Nyro	*Nested*
Carl Perkins	*Friends, Family & Legends*
David Sanborn	*Songs from the Night Before*
Boz Scaggs	*Other Roads*
Carly Simon	*Boys in the Trees*
Spinners	*Labor of Love*
Dusty Springfield	*Living Without Your Love*
Spyro Gyra	*Morning Dance*
Ringo Starr	*Ringo's Rotogravure*
Steely Dan	*Gaucho*
Luther Vandross	*Any*
Dionne Warwick	*Dionne*
Weather Report	*I Sing the Body Electric*

Lee, second from left, with Paul Shaffer and the CBS Orchestra.

Above: Nelson Kwok; Bottom: Courtesy of CBS

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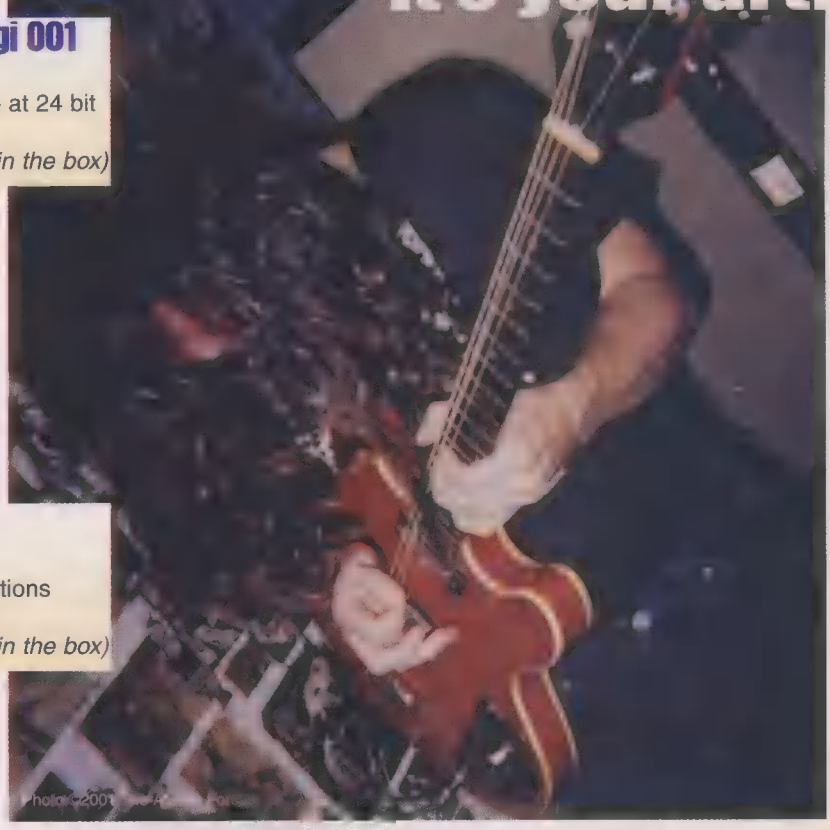

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The Sweet Spot

Does Your Room Sound Great, but Suffer from Ugly-Studio Syndrome? Here's How to Turn That Sow's Ear of a Workspace into a Silk Purse

By Rusty Cutchin

It's a design truism that "form follows function." Even if, like me, you've spent most of your life wondering what the hell that means, while searching for the perfect groove, guitar sound, or sample, at some point you'll find yourself thinking about what your studio looks like and how that affects the quality of your work. "Form follows function" (think of them as the F-words of design) simply means that the *look* of something is less important than how the thing *works*. "Duh," you're thinking, "Can I get back to work now?"

We all know that the quality of the audio work is the most important aspect of your studio, but it's wise not to underestimate the positive results of a room that looks (*and* functions) great. With the explosion of home recording around the world, there are an amazing number of affordable (or free) options available to the person who wants to organize and stylize his or her studio. Almost overnight, you can transform yourself into a studio *fashionista* (another F-word!) and leave behind the guy who looks around his room and wonders, "Now, where *did* I put that mixing board?"

Rules of the Room

Of course, good design and organization come naturally to some people. Pro studios have to make it a priority because of competition, and therein lies the first rule you should remember about the layout of your own studio:

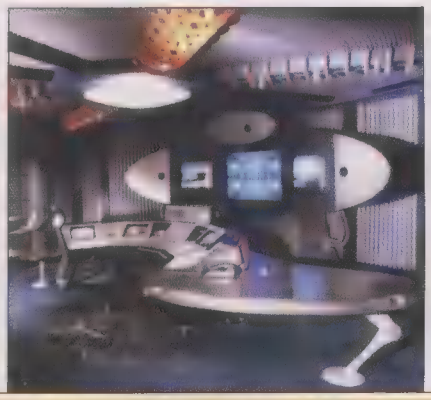
■ **People like to work in a clean, organized workspace**—and that's not just because it looks good. In a well-designed studio, people have plenty of room to spread out, they don't become fatigued as quickly, and the work ultimately goes faster. When your tools are organized ("Why, of course, that patch cable's right here, along with my 400 other neatly-arranged-by-length patch cables"), clients feel they're working with a guy who gets the job done, even if you walk upstairs to the household-from-hell after the session.

Now you have to understand that the idea of me writing about workspace organization is like Mike Tyson writing about brain surgery. Except for the fact that he may eventually need some, he's spectacularly unqualified. People who know me will feel I have similar qualifications regarding organization (you should have seen the two editors who sit next to me, neatnicks both, laughing as they read this). Nevertheless (he said confidently), a studio is not a desk covered with press releases, newspapers, software boxes, audio tapes, and photos of Shania Twain. Nor does it have to *contain* one. And that suggests a second rule:

■ **Keep your messes organized (and out of sight).** If you tend to put off chores like straightening up, ensure that the studio is cleaned up first. Sure, one of the great attractions of a home studio is working the way *you* want to work, and not letting anything get in the way of the music, not even pet hair in the patchbays or Coke in the console (both of which, I'm ashamed to say, I had to deal with in my early studio days. Let me assure you that soda and circuit boards are not a match made in audio heaven.) But even if you don't want to live in a sterile, Martha Stewart–type house, you will grow to prefer a studio that looks as if she set it up (now if she would only back up those hard drives). You may not mind searching through piles of pizza boxes to find that track sheet, but the people you want to produce will.

I began recording and producing in Texas and moved to New York after I'd been in the business for several years. What's the biggest adjustment I had to make (besides replacing Mexican food with Italian)? The *spatial* adjustment. Learning to operate in smaller and more vertical spaces is one of the primary challenges a studio owner faces in urban areas. And which space in a studio is the most critical (just as in any room of the house)? *Floor space*. Thus, rule three:

■ **Keep your stuff off the floor.** It's only natural, when you run out of wall space, to requisition the nearest surface to put extra stuff, like computer printers, road cases, cables, shoes, pizza boxes...and the nearest surface is almost always the floor. But using it for storage is a mistake. Nothing makes a room feel more crowded and cramped than extra stuff spread out around the floor or even under a desk. It's also unnecessary, particularly if the items are mostly unused and if, as in many big-city apartments, the room has high ceilings, which means lots of unused wall space. Figure out how to use that wall space (see



Studios designed and built by AKA Design Ltd., London (*www.akadesign.co.uk*)

tips on page 40), or find a closet or seldom-used room in which to stash things—anything that you don't need on a daily basis. I've been in New York home studios that would feel twice as big if all the unnecessary stuff was off the floor.

Arranging and Conducting... the Furniture

Once you recognize the need for clean space and get the unnecessary stuff out of your studio, you're getting close to the fun part, which is spending money to set up or replace the fundamental pieces in the room. No, not the gear, the stuff that *holds* the gear—and holds the people, for that matter. With so many good-looking and functional pieces of furniture and storage units out there, you should never have to rely on a rickety keyboard stand to hold your mixer, or your hippie uncle's musty beanbag chair for the clients.

But first consider whether this is a good time to take care of some *structural* problems in the room. Check out "Adventures in Airspace" on page 42, "Filling the Cracks" on page 48, or our JUNE/00 issue on home-studio construction to see if you have sound containment or improvement issues to deal with.

If you know the room is ready to go sonically, then consider these rules when you're moving in furniture, gear racks and stands, and storage units:

■ **Place the longest unit on the shortest wall.** This is an old rule of furniture arranging—it creates more apparent floor space—that often comes as a revelation to people setting up a home for the first time. It should actually be fairly intuitive to a studio designer, because the "longest" unit will almost always be the mixing console/monitor arrangement. If the monitors are arranged on the shortest wall, there will be more airspace between them and the rear wall, which will help you deal with reflections easier and generally make the room sound better with less work. It will also afford more room between you, the monitors, and other people sitting behind you.

Why does this layout seem like the opposite of that in pro control rooms? Simple. They are bigger rooms, in general, and there are more resources to deal with acoustic problems.

■ **Think horizontally for working, vertically for storing.** I'm always amazed at the energy of engineers in small-space studios who love jumping up and down to fix something—a glitchy banana plug behind a power amp on the floor or a DIP switch on the MIDI interface at the top of an 8' rack. Come on! I say, if you can't reach it from an office chair, it ain't worth tweakin'! What may sound like a strategy born out of laziness will help in conserving energy that may be needed when things go wrong and a session lasts longer than expected. (Just like with money, every little bit adds up.) Even in a small room, it's easy to lay out your work surface and primary gear horizontally. One way to do this is by using affordable and widely available furniture like computer workstations, even if you don't use a computer in your studio.

Likewise, if you must store all your peripheral gear in the studio, make use of all the room's available height with bookcases, cabinets (preferably with doors), or other shelving. Often, other storage units can be placed on the top shelf for leftover items. They can also be placed in closets to take advantage of the unused vertical space.

■ **Measure twice, buy once.** Sometimes there's a built-in problem that you must deal with, like the concrete pillar in the middle of our studio here at *Home Recording*. Maybe at your studio, the vocal booth is also the laundry room, or maybe you don't have enough clearance between the door and the side wall for that great couch you wanted.

Get over it! There's more than one way to skin a cat—or cut a track. The perfect studio layout sometimes requires patience and planning. Not enough room for the mixing station you were going to buy or build? Can't install that perfect rack because it will block the window? Relax, step back, and consider alternatives.

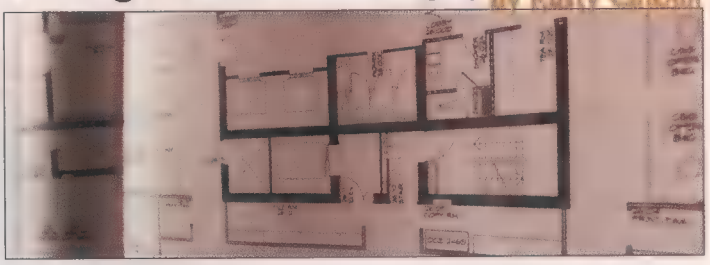
In the following section, Studio Fashion Tips, we spotlight some products that might solve particular problems you're having in the design and organization of your room. A home studio can be as expensive and beautiful or as inexpensive and funky as you want it to be. The important thing is that it makes you feel good working in it, and that it makes you want to come back. (Just keep the stuff off the floor, *aaaiight*?) HR

Studio Fashion Tips

Tools for organizing, accessorizing, and treating your room

By Barry Cangelin

If you're having problems with the sound, look, or layout of your room, it may be time to take the cash you set aside for loop CDs and get back to basics—like replacing those TV trays your mixer is about to crush. Here are some ways to upgrade.



The Workstation.

Plenty of companies like Omnirax (*www.omnirax.com*) and Raxxess (*www.raxxess.com*) make basic mixing tables with built-in speaker stands and areas for rackmounting gear. You can find them at all the major music stores and online retailers. If you have to have all your gear installed in one piece of furniture, this is a good way to go. However, consider the ubiquitous corner computer workstation. There are thousands of styles and colors to choose from in any office-supply catalog. You can add matching components to them, and once you put recording gear on them, they look as good as the custom jobs. Setting up a workstation in a corner also solves the "parallel wall" problem, as long as the rear walls in the corner are treated. What's a good way to do that?

The Portable Room Treatment.

Auralex's Max-Wall system (*www.auralex.com*) consists of large foam absorbers with center-cut holes that slip down over mic stands with extensions. You can create a 7' baffle with three panels and a stand. Add more and you can instantly change the acoustics of a room, adjusting your live and dead spots at will. Also check out the "Studio in a Box" from RPG Acoustics (*www.rpginc.com*) and products from Acoustics First (*www.acousticsfirst.com*).

The Rack.

The choices boggle the mind. There are now audio racks in every conceivable shape and size. Find a height that takes full advantage of your ceilings, and you may never need more than one. Middle Atlantic makes several affordable units. Our project studio fave: the SRK rolling rack with slanted top section. Put the seldom-adjusted power amps in the bottom, the frequently tweaked at eye level, and rock on.

The Key Stand.

For years, studios have used keyboard stands for more than their intended purpose. These days, they can accommodate not only lightweight synths and drum machines, but other crucial gear—laptop computers, modeling guitar processors, even full-fledged digital multitrack workstations. This makes the keyboard stand a viable alternative to the traditional mixing table. Just try to avoid sushi and shakes.

The Guitar Holder.

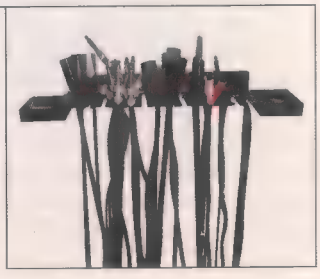
For the guitarist's home studio. Hard to fight that burning desire to make your studio look exactly like the music store? No problem. Guitar hooks come in handy whenever two or more axes wind up in the same control room. If you're cutting guitar and bass parts for several days running, this is the best way to avoid cases all over the floor. But please, keep the humidity even.

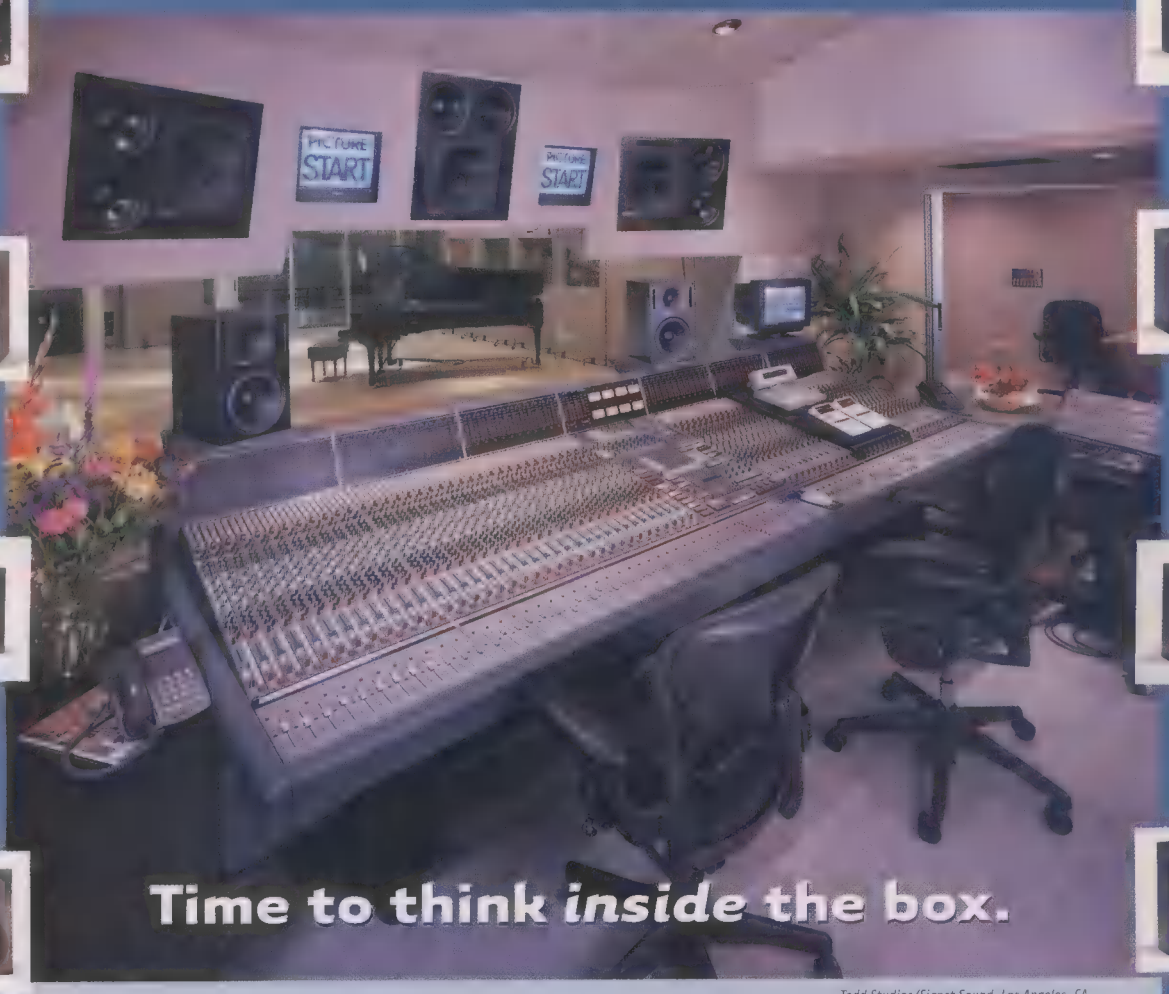
The Chair.

When you pick out that workstation at the office megastore or discount membership club, pay attention to choosing a solid chair or chairs to go with it. Find one that gives you good support, doesn't cost an arm and a leg (in all senses), and gets you smoothly from job to job—just pretend you're picking an agent. And don't forget your posture, kiddies. Extra credit: Buy an extra chair with removable arms for those pesky guitar players.

The Cable Holder.

Keep those cords rolled up and out of the way. The old pegboard-and-hook routine works, but it won't win you any design awards. Some companies make cable trees, which look a lot better and use that vertical space. Pictured at right is Middle Atlantic's Claw—it's designed for patch cables but is capable of holding both cables and adapters in small trays on each side.





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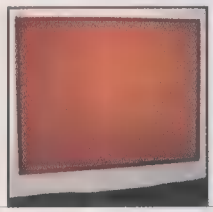

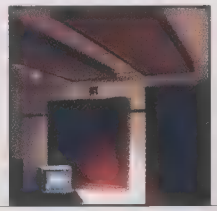

Adventures in Airspace

Making the Most of Your Listening Environment

By David Darlington

If you are constructing a studio control room in your home, you've probably spent a lot of time deciding on your equipment purchases—your choice of speakers and mixing board and other such considerations. Basically, you've set it all on a table or keyboard stand, fired it up, and it sounded great, right? If you did your homework, it did, but even when your sound is awesome, truly effective studios are more than meets the ears. Music can fly off your desktop in any kind of room, but if you spend a little thought and a few bucks on your control room environment, you can significantly improve the quality of your listening space, and often your music.

Surface Considerations

The first thing to consider is the shape of the space itself. Is your room large or small or wide or narrow? Try to find a place for your speakers that allows ample room in front for the sound to develop outward, but not so large that it creates unwanted echoes. If you're in a basement or large rec room, consider making the space smaller with some sort of divider—one that absorbs or disperses sound instead of creating reflections. If your space is small, place the speakers along the long wall and give them enough separation to create a good stereo field, but avoid corners that trap bass frequencies and make speakers sound boomy. Also, keep your speakers a foot or two away from the back wall to avoid reflections.

The next consideration is the texture of your wall surfaces. Basically, a "true" sounding control room is made up of many different kinds of textures: *reflective* (hard walls), *absorbent* (carpets and curtains), and *refractive* (shelves and bookcases). The floor is often the best place to start (before the gear comes in). A cement or wood floor usually needs some type of carpet to stop reflections. But choose a rug with a thickness that won't make the floor too "dead." I like to have a bit of hard surface on the floor, preferably just in front of the mixer, so I will often lay a throw rug behind the listening position, leaving the floor in front of the mixer exposed. There should also be carpet along the front wall (and under the mixer table) to control reflections from surfaces nearest the monitors. Remember: A lot of traffic may tread there, so go with the highest quality carpeting you can afford.

Ceilings are a bit more difficult to change, so you might just have to make the best of what you have. If you have handyman skills and your ceiling is made of a very hard surface (like cement), you will be better off installing a drop ceiling of acoustic tiles. The parts for this type of ceiling are readily available at home-improvement centers. They consist of an aluminum grid frame, which suspends from hangers that you install into the structural ceiling, and acoustic tiles, which are "dropped" into the squares of the grid. This will create a semi-absorbent surface. To further deaden the ceiling, you can add insulation above the tiles. If you are really adept at this sort of thing, angle the ceiling down

CONTINUED ON PAGE 46

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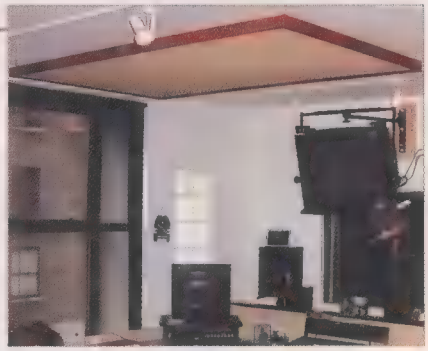
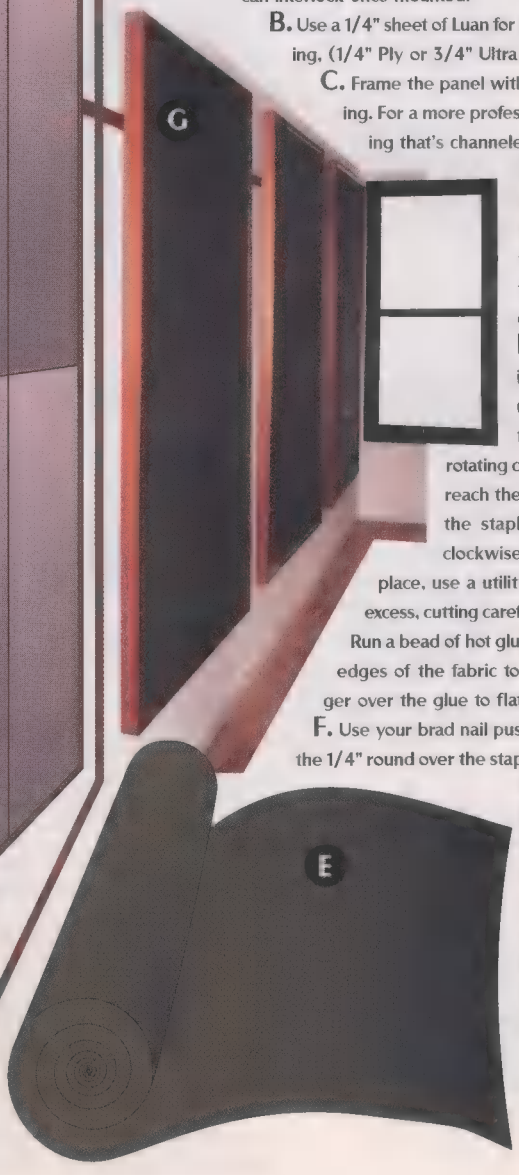
How To Construct A Sound Panel

By Levin Pfeufer

Tools You Will Need

1. Tape measure ("measure twice, cut once")
2. Saw (or have your wood precut)
3. Dust mask (a must for dealing with insulation)
4. Brad nail pusher (prevents many bruised fingers and bent nails)
5. Hammer (light weight)
6. Nail set (for tapping the nails below the surface)
7. Fabric scissors
8. Staple gun (medium-length, flat staples)
9. Glue gun (use clear drying glue sticks)





How To Put It All Together

Choose your location, determine the appropriate size for your sound panels, and calculate the amounts of materials you'll need. Cut your wood (or have your material supplier help you). Buy your sound insulation and choose your fabric cover. Velour is a good choice.

A. Use a French cleat to attach the sound panel to the wall. This type of cleat can be made with two 3/4" strips of plywood—one mounted on the wall and one on the panel. Have a 45-degree angle cut along the edge of the two pieces of the cleat so they can interlock once mounted.

B. Use a 1/4" sheet of Luan for the sound-panel backing. (1/4" Ply or 3/4" Ultra Light will also work).

C. Frame the panel with 2" solid wood molding. For a more professional look, use molding that's channeled.

D. Fill the panel with soundproof quality insulation. Use insulation that is the same thickness as the width of the molding.

E. Staple your fabric into the rebated channel. Work from the four center points, rotating clockwise out, until you reach the corners. Then repeat the stapling pattern counterclockwise. Once the fabric is in place, use a utility knife to remove the excess, cutting carefully around the edges. Run a bead of hot glue over the staples and edges of the fabric to seal it. Rub your finger over the glue to flatten as it dries.

F. Use your brad nail pusher and nail set to fix the 1/4" round over the staples and into the molding's channel, if there is one.

G. Hang your panels on the wall, as in the illustration at left. For ceiling mounting, as in the photo above, use hook-and-eye hardware.

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CONTINUED FROM PAGE 42

slightly toward the listener and then back up as the new ceiling approaches the rear wall. Remember that you're trying to avoid parallel surfaces. This angled ceiling also looks great—and really impresses the clients!

If you can't drop the ceiling because of space limitations, the next best treatment is to break the surface with light fixtures, textured paint, or anything that will keep sound waves from reflecting in a pattern. The goal is to break the wave up and diffuse it into many smaller ones that won't color the sound in your listening position.

Panel Discussion

Hard walls are usually treated with a combination of *absorbers* (soft surfaces) and *diffusers* (multifaceted reflective surfaces). You can create these kinds of surfaces easily and inexpensively with supplies from a home store.

One of the easiest pieces to build is an absorber. Basically, this piece is just a large picture-frame construction filled with insulation and then covered with stretch fabric and hung on the wall. First, determine how much of the wall you want covered. Walk around your room clapping your hands and listen for very quick echoes, called "early reflections." Hang an absorber on the walls that produce the loudest of these reflections.

Cut a piece of 3/4" plywood to the shape you need. Size 4'x8' is okay, but your walls may require 2'x8' or 4'x4'. Tailor the shape to cover a large portion of the offending wall. Next, nail thin wood strips of 2"x 1/2" around the edge and flush with the back of the plywood, creating a frame. Inside this frame, staple yellow fiberglass insulation like the kind used around air conditioning ducts. Completely fill the frame.

Buy some inexpensive stretch fabric in the color of your studio décor. (I usually go with basic black, but if fuscia is your thing, go for it!) Staple the fabric to the outside edge of the top of the frame and then stretch it downward and staple it firmly to the outside bottom edge of the frame. Stretch it again to staple the side edges. You now have a large cloth-covered frame with unsightly staples and ragged cloth on the outside edges. Simply trim the cloth and layer another strip of 2"x 1/2" wood around the outside edge and paint the edges to match the décor. Lastly, use molding to make an edge around the front of the edges to really create a picture frame.

If you are a decent carpenter, miter the corners at a 45-degree angle. Don't forget to paint these surfaces first so you don't ruin the cloth. Now just attach the picture to the wall with hooks and fasteners, and voilà! Sonic treatment worthy of the Museum of Modern Art! Be creative with the size and shapes for best results. I even have an inverted U-shape around my control room window that really tones down my front wall and looks very high-tech.

The weird shapes hanging at odd angles from high on the walls make great conversation pieces—and demonstrate to your guests your vast knowledge of acoustics and physics!

Getting Cornered

In certain parts of your room, your clapping test will produce more of a tone or ring than an actual echo. These obnoxious sounds are called "standing waves" and they're hard to kill. They often appear in corners, like a ceiling corner, where two large, hard surfaces meet. One way to treat these is with a combination absorber/diffuser. The basic material for this piece is pegboard—just like the kind you have in the garage for hanging the power tools. Cut a length of pegboard to fit your problem area. These shapes do not necessarily have to be oblong; in fact, it's better if they're not. Use unusual angles and V-shapes for best results. Get the same type of fabric you used on the absorbers and stretch it around your shape like wrapping paper. Staple the fabric to the back surface so the staples won't show. The trick successfully using these pieces is to hanging them at an angle between the two adjoining surfaces. For example, if you're trying to solve a problem in the corner of the ceiling, fix the piece to the wall at it's lower edge, and then let the top protrude forward using picture-frame wire so it hangs away from the ceiling at a 45-degree angle. When sound heads for the corner, some will be reflected and some will pass through the tiny holes in the pegboard. The waves that pass through the holes will strike the ceiling and wall at odd angles and be diffused in many different directions. Result: no more standing wave. These weird shapes hanging at odd angles from high on the walls also make great conversation pieces—and demonstrate to your guests your vast knowledge of acoustics and physics!

Up Against the Wall

Finally, you'll need to treat the rear wall, which causes the majority of reflected sound to come back to your listening position and distort your sonic image. The piece you want to hang on the rear wall is called a "diffuser" and it is also based on the picture-frame motif. This shape is usually oblong and wider than it is high.

A good size to start with is 4'x8', because plywood is sold in that size. This time, make your edges from something stronger, like 1"x2", since they will be adding needed support. Fill the basic frame with carpet (color coordinated, of course). Yes, I know carpet is absorptive, but first you need to tone down the parallel surface.

Next, cut lots of slats, about 1½"x1/4". These will lie vertically in the frame and need to be long enough to reach from inside the frame at the top to outside the frame at the bottom, creating a slight downward tilt. The next adjacent strip will go inside at the bottom to outside at the top, creating an opposite upward tilt. Keep layering adjacent strips to fill the whole frame, making a pattern of upward and downward angles. You can see that waves hitting these strips will be broken up and reflected in many different directions, diffusing the sound.

Finish off the frame with a border of molding, mitered at the corners, and paint all the wood to match your décor. Affix the diffuser solidly to the back wall in the center behind the listening position to effectively neutralize the back wall.

Three principles to keep in mind:

1. **Avoid parallel surfaces. Wherever they exist, create angles and/or break up the surfaces.**
2. **Use a combination of hard and soft surfaces in the room to create a natural listening environment that is neither overly live nor dead.**
3. **Don't spend a lot of money on products that you can create yourself—and have fun!**

There are other ways to break up large, parallel surfaces. Bookcases with lots of different-sized books make great natural diffusers. If you have cabinets in the room, try hanging doors that are a bit too large, so that when they close, the doors create a slight outward angle. Also try putting foam or carpet swatches on the cabinet doors to cut down on reflections. HR

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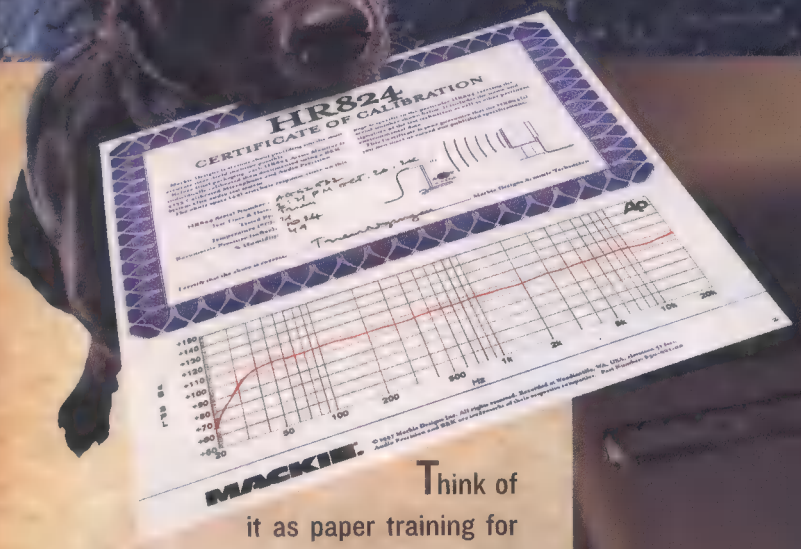

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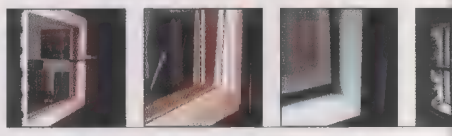


Filling the Cracks

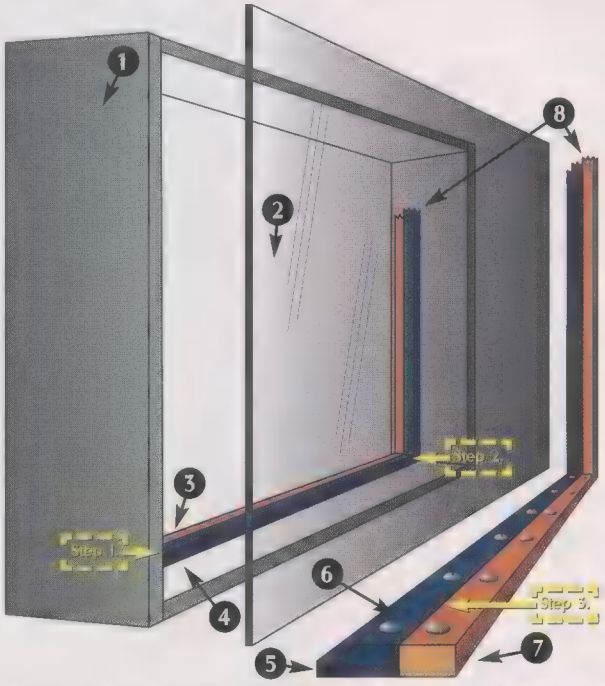
If You Really Want to Contain Sound from Room to Room, You Have to Seal the Deal

By Arty Skye

Before I built my own studio, I studied studio design techniques and noticed a wide discrepancy in the way professional studios, many of which I work in regularly, were built. I remember a session in a world-class studio with completely redesigned and recently remodeled rooms. It looked great, the control room was true (for the most part), and the whole vibe of the studio felt very comfortable. I also noticed that the wall dividing the control room and the studio was about 3' thick, with the usual rectangular window installed within.

While the clients were listening to the mix, I decided to wander around the newly designed live room. I walked into a side room used for vocal overdubs and out its back exit, shutting the doors behind me, to enter the live room. *Hmm,* I thought sarcastically, *nice isolation*—when I heard the Yamaha NS-10 monitors bleeding loudly through the glass between the rooms.

With a 3' wall, it made no sense that the NS10s were audible. These are, after all, close field, bookshelf speakers and not giant primary reference monitors. I examined the way the glass was fitted into the window (actually two windows, mounted on each side of the wall) and realized why the seal wasn't working. The glass was attached directly to the wood, with a bead of silicone sealant around the baseline. The same was true for the sheet of glass on the other side of the wall. I had seen this design many times before, but never had a reason to question it until now. This technique didn't make sense because the vibrations would transfer from the wall to the glass (and back). The 3' wall basically had ■ huge hole in it, which made it quite ineffective.



1. Wood frame inside wall
2. Glass pane
3. Molding "stop"
4. Neoprene rubber seal for front of pane
5. Neoprene rubber seal for edge of pane
6. Neoprene rubber seal for back of pane
7. Molding "stop"
8. Molding and neoprene continue around perimeter

Another problem was apparent in the door seals, or lack of them. Although the studio had installed thick wood doors, they were left with about a 1/2" gap at the bottom. They were like regular doors that you see in a house, with no sound-isolating material around the threshold. These fundamental isolation problems had been overlooked in the construction of this multi-million dollar studio (which otherwise is one of my favorite studios in New York).

LEVIN PFEUFER

The Real Deal on Seals

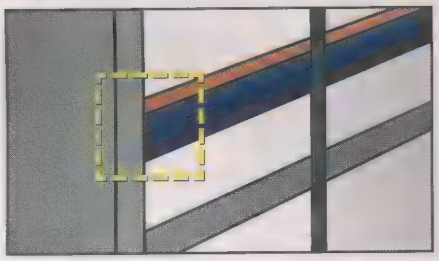
When I was designing my studio, I picked up a book called *How to Build a Small Budget Recording Studio* (2nd edition, July 1988, Tab Books) by Frederick Alton Everest, Alton F. Everest, and Michael Shea. One of the authors, Mike Shea, happened to be a former teacher of mine at New York's Institute of Audio Research (IAR). He agreed to come down to my studio before construction and give me some advice, which turned out to be invaluable. Mike gave me a rundown on the proper way to install internal windows. The secret to success lies in mounting the glass properly.

Many people working in a commercial recording studio for the first time notice that the panes of glass in a control-room window are angled. There are two reasons for this: The first is to control reflections. When the glass is straight, reflections bounce back and forth between the two panes. You sacrifice the integrity of the seal, get standing waves, and end up with a completely reflective surface inside both rooms. The second is to avoid the mirror effect (which lures musicians into looking at themselves, when they should be watching the engineer)—it can be quite distracting! Whether or not you decide to angle your windows, it's relatively easy to seal them effectively and professionally.

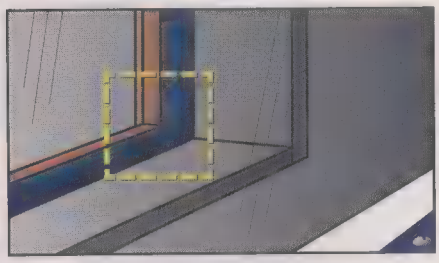
Step by Step Through the Looking Glass

To prepare the window area for the seals, first you need to frame the inside of the window with wood. Use a level and make sure the surfaces are smooth and even. Use clear silicone to fill in any gaps in the wood.

1. You'll need some wood molding, about 3/4" high. (I used 1" square molding, but you can also use 1/4" rounds.) Frame the inside of the window space, creating a vertical angle outward (10 degrees is sufficient) at the top if possible. Make sure to leave enough room for the thickness of the glass, plus another piece of molding. Add in the thickness of insulating material (we'll be using neoprene) and double it. Example: If your wall is 1' thick and you're using 1/2" thick glass, you want the top (if it's angled) of the inside frame to be no less than 2¼" from the edge: 3/4" molding, plus 1/2" neoprene, plus 1/2"-thick glass, plus 1/2" neoprene, equals 2¼".

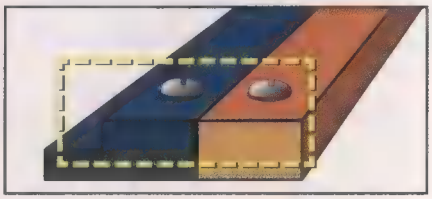


2. Buy 1/2" thick by 1/2" to 3/4" wide closed-cell neoprene rubber with an adhesive backing. Measure the entire perimeter of the window and multiply by seven. This will give you the total length of rubber you need for both panes. (You're going to surround each pane three times; multiplying by seven gives you enough for backup.) Now you need to know how thick the glass on this side is going to be. (It's best to use two different thicknesses, such as 1/2" and 5/8", so that they won't have the same resonant frequency.) You'll be cutting neoprene for the edges of the glass. The idea here is to totally sandwich, or float, the glass between the rubber, so that the glass is isolated from the wood.



3. Take the neoprene and run it along the outside of the molding facing you. Make it neat and tight. Next, take the neoprene of the same width as the glass and run it along the wood frame at right angles to and butted up

tightly against the neoprene you previously put down. The glass will rest on this rubber. You'll probably need to maneuver the glass a bit to fit it into this rubber frame. Next, you'll have some previously cut molding to match the same lengths as the molding you just used to frame the glass. Carefully attach neoprene to this molding and screw the molding into place, butted up tightly against the glass. Repeat the procedure for the other piece of glass.



Here are a few tips that will help you with the installation.

- Make sure you clean the glass thoroughly before mounting it. Fingerprints or smudges on the inside of the glass will drive you crazy.
- If you're staining the molding, make sure you do it before you start attaching the neoprene.
- If you want a felt look inside the window, one inexpensive and easy way to do this is to get some Styrofoam board, cut it to the dimensions that you need (usually the space between the two pieces of molding), and wrap the felt around it. You can use adhesive spray to make the felt hold fast to the Styrofoam board. Frame the inside of the window with it, but make sure it's attached properly on all sides—you don't want the top sagging in the middle six months later. Use screws to attach the molding to the window frame. This way, if you need to get in there for any reason, or if a mic stand goes through the window and you need to replace the glass, it's much easier to remove than if it was glued on or attached with nails.

Door Seals

The cheap and easy way is to get some more of that closed-cell neoprene, and put it around the threshold of your door.

A better way is to remove the existing molding from around the inside of the door and replace it with some thicker 1" square molding. Put some thick neoprene around the inside of this with enough clearance to close the door with a gentle push, compressing the neoprene slightly and creating a snug fit.

The more expensive but better way is to contact a company called Zero International (*www.zerointernational.com*), which makes great seals for doors. Besides the rubber for around the sides, they also have a bar for the bottom of the door. When the door is closed, this bar lowers automatically, pressing the rubber to the floor and completing the seal. HR

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"DJ" MOB

NEW PRODUCERS DO THE DIGITAL DANCE

By Jeff Perlah

Daft Punk, Deep Dish, and John Digweed Take Their House Mixes to the Big Show

Home recording and house music. Neither was invented with the other in mind. However, the two certainly have become connected. In fact, many creators of the dazzling electronic music heard in today's dance clubs have relied on home studios to craft their sonic art.

Daft Punk

Deep Dish

"It has a lot to do with the fact that the technology is really cheap and everybody's able to set up a home studio," says Ali "Dubfire" Shirazinia, who works with Sharam Tayebi in the groundbreaking Washington, D.C., house music duo Deep Dish. Along with French superstars Daft Punk and John Digweed's U.K.-based production team Bedrock, they form the new breed of DJs-turned-producers-turned-stars. Ali, Thomas Bangalter of Daft Punk, Digweed, and his partner producer/engineer Nick Muir, spoke to *Home Recording* about creating dance hits at home.

John Digweed

Left Photo: courtesy of Virgin Records; Middle/Right: Photo Courtesy of Formula

DAFT PUNK: DISCOVERY ZONE

Daft Punk's first full-length album was called *Homework*, so you can probably guess where it was recorded. The 1997 double-platinum platter was cut in a 12 foot by 12 foot studio that was located in the Parisian home of Thomas Bangalter, who is one half of the French team. "It was my bedroom when I was a little kid," the DJ/producer/keyboardist says. "There's room only for one person. It's more like a cockpit."

Even though Bangalter moved out about three years ago, he didn't move the studio. In fact, it was around the time he changed residencies that Daft Punk started crafting *Homework*'s follow-up—the recently released *Discovery* (both are on Virgin)—in the same small room. "The acoustics are really nice," Bangalter stresses. "There are many studios out there, but not many that actually sound really good. So we kept the place to record more things. We tend to feel now that it's a magical place."

You can understand just how Daft Punk feels when you hear *Discovery*'s dazzling and diverse canvas, which features several hot cuts: "One More Time," which hit No. 1 on *Billboard*'s Dance/Club Play chart and is the subject of a stunning animated video by Leiji Matsumoto; the funky and disco-ish number "Aerodynamic"; and the catchy, semi-robotic (thanks to processed vocals) "Harder, Better, Faster, Stronger," a song to which you can easily picture the duo grooving, while sporting their new look. Both Bangalter and his partner, Guy-Manuel de Homem Christo, are sporting robot heads and arms, which have replaced the rubber masks they wore during their *Homework* era. Clearly, the Punks are still having fun with their multi-faceted electronica. Along the way, they've also become more emotional. "The first album was very physical in the way it made people dance, and this album transmits more of an emotional dimension," Bangalter notes.

This time, Daft Punk also worked hard coaxing new sounds out of their instruments, Bangalter says. "We're not very good players as musicians, especially for a whole track, but playing something good for a few bars, then looping it, is something we know how to do," he explains. "The computers and the MIDI helped us a lot in terms of cutting and pasting different takes. We would never have been able to do this thing without editing, you know?"

Remarkably, all of their instrumentation—like Bangalter's startling synth solo on "Digital Love" or his occasional guitar parts—went down in their tiny studio. To cut the album, the band broadened its gear arsenal. When Bangalter played synth for *Homework*, he relied mainly on '80s models. Those came into play on *Discovery*, but so did keyboards and guitars from the '50s, '60s, and '70s—like a Fender Rhodes, a Fender axe, a Wurlitzer, and ARP and Yamaha synthesizers. Bangalter discussed how he and de Homem-Cristo created the music on *Discovery*.

What new techniques did you use on *Discovery*?

When we released *Homework*, we still hadn't done any work with vocals. But starting with when I produced the song "Music Sounds Better with You" with the group Stardust, on my label RoulÈ, and then with *Discovery*, I did a lot of research and really began learning to handle and play around with vocals, and that's something we're still really interested in doing. There are four different vocalists on *Discovery*.

How did the studio affect the sound of the new record and your ability to create music?

All this equipment, if it were in another room, would probably not sound the same. So it has to do with the room itself, its acoustics. Also, I started this studio around 1992, so I've brought machines in, machines out, keeping what I want and developing a way to work that is very personal and does not imply technical recording industry stan-

Luis Sanchis

dards. It's a really free way [of working].

This may be what house music is: You just do things that are not by the book, and do things in a way in which you have more freedom. You can use instruments and tools but not for their original purposes, and also for experimenting and learning. We started to make music in our studio. We made the first album there, and we could have gone in any studio to record the second album, but we saw that things sounded great there.

Did you use tape on the new album?

You wouldn't believe how we make music. We have some [multitracking], but most of it is done on samplers and MIDI and resampling, so it means that instead of doing sub-groups, we'll do maybe a rhythm track, sample it, and then re-put it in the mix, and resample different phases. We're working on an 8-channel mixer, but at the end, there maybe 30 or 40 or 50 channels, because it was subgroups of things that were resampled. Multitracking would come just from stereo direct to disk, just for some vocals or something.

We recorded everything on DAT and everything on analog as well, like reel-to-reel, in order to decide for each track which would be the best-fitting results. There was also a lot of testing on samplers; we used three or four different samplers and resampling techniques. There was also a lot of testing of each instrument—not the characteristics of the instrument, but how it sounds. Does it sound good or doesn't it? That's how we really make our choices.

The digital technology is really crazy and enables a lot of different things when you see it on paper; but we decide on the equipment [based] on the sound; we don't decide with our brains, but with our ears.

Sometimes the concepts are really nice, like full automation or loading of presets. There's a lot of things you can do, but when you test it, it might not sound right. There's been a lot of work [in] the last eight years of selecting only the best-sounding tools, and it's always been a 'sound decision,' I would say.

How did you create drum parts on this album?

With a lot of sequencers, like [E-mu] SP-1200, the [Akai] MPC3000, and drum machines like a (Roland) TR-808 and a TR-909, and Lynn drum tracks. Sometimes we recorded some loops, but most of it is resequenced anyway.

How do you choose samples?

I think this is probably the most random and longest process, which is really listening to a lot of music—many records. There are only four really big samples on *Discovery* and the rest is maybe really little snippets here and there. We tend to step on a good sample that we want to use every two or three months; it's really a long process.

Were you aware the Electric Light Orchestra has a record called Discovery?

To tell you the truth, we know ELO but we didn't know that. Discovery is still pretty much an average word; we didn't name our record something like *Sgt. Pepper's Lonely Hearts Club Band*. Discovery is something that can be used in many ways.

Let's talk about the way the record was mixed.

It's pretty funny. Being in a home studio, you're able to spend a lot of time on mixing. And especially with the fact of not using multitracking, we sometimes spent six weeks just on the mix of one track.

Is that typical for Daft Punk?

No, that was new for us. The third track, "Digital Love," was six weeks of mixing and programming, just to be happy with the finished result.

What kind of gear did you use for mixing?

Old Mackie 1202s, the first versions back from the early '90s. It's just an 8-channel mixer, and we have two or three of these, so we can sub-mix.

Who are some of Daft Punk's influences?

We like the idea of have very good sounding minimal sound. Some of Prince's recordings sound really good and really simple at the same time.

JOHN DIGWEED AND NICK MUIR: BEDROCK AND BEYOND

Last October, thousands of house music fans congregated at the Mayan Theater in Los Angeles to experience a landmark event. That night (and part of the morning, too) John Digweed played what would turn into his third installment of the Global Underground series. *Digweed/019/Los Angeles* (released this year on the Boxed label) and his powerful and evocative 5 1/2-hour set was a dance-inducing success. But he still had much to do in order to complete the recording.

Soon, Digweed was in the studio, hard at work. "Basically, I broke the set down to where I had about 2 1/2 hours worth of music that I was happy with," Digweed explains. "From there, I mixed on the turntable, but I put the music into a computer, with a producer named Paul Morris, who did all the Pro Tools editing. Sometimes if you've got a ten-minute track, it sounds great in a club, but over a CD, you want to cut to the chase a little bit more and you wanna keep people's interest. So I think that it's become essential that when we do these mix albums we make them snappy, punchy. You don't feel like something's going on too long."

Still, he was striving to create an album that was representative of what went down. "The main thing for me was to make it so people would be like, 'I was there that night and this is pretty much how it was.'" Digweed has become one of the most popular and critically acclaimed DJs in electronica. Recently, he even played the role of a DJ in the documentary film *Groove*. But of course, it's his numerous musical projects, both in the studio and in large dance clubs, which have made him a star. If you saw the darkly humorous film *Trainspotting*, then you probably remember the soundtrack song "For What You Dream Of," which Digweed and his studio partner, keyboardist/producer Nick Muir, recorded back when they formed their collaboration known as Bedrock.

"A friend of mine introduced me to Nick in a club I was playing," Digweed recalls. "This was in '91. And I saw him the next month, and he's like, 'Why don't you come up to the studio and we'll do a track.' We went up there, and I brought a box of records and ideas, and before we knew it, that was the track we did. Since then, the duo have collaborated on a slew of recordings, including original cuts like "Beautiful Strange" and "Voice," and a remix of Underworld's "Cowgirl."

"It's just a really good working relationship," Digweed says about Bedrock, and "Nick's an absolutely amazing programmer and keyboard player who's been playing the keyboards for 30-odd years. Because I'm out at the clubs and picking up new records all the time, I'm very much focused on what sounds we need to be looking for. I'm very conscious of making sure that when our records come out, they're very cutting edge. So I'm always playing Nick new stuff. Nick is very good with coming up with the sounds, the weirdness, the mood. We kind of get these sounds working together in the computer, and then we arrange the tracks together."

We recently chatted with both Digweed and Muir:

What are you working on together these days?

MUIR: Well, we've got some remixes to do. We'll be remixing a new New Order song. I've just gotten the parts for it, and we're starting to have a look at it. And some friends of ours in Evolution have written a really cool song. We're gonna see if we can do a remix of that. We're gonna be busy this year.

Lets hear about the studio where you guys record.

MUIR: I have a room here in a building, which is owned by a friend of mine. So basically I've got all my equipment here and we write and mix here. I originally had a room in a studio, which was owned by the same bloke who owns this place, and that got closed down. Then I bought a loft and I moved all my equipment there. I worked there for a couple of years and then my friend opened this place.

John, what were the pros and cons of having Nick's home studio to work in?

DIGWEED: Well, we weren't paying rent [*laughs*]! The main thing was we could go in his house and knock tracks out. But as we started getting more work, we'd be spending 12 hours a day in a cupboard, basically. It was too claustrophobic. You can't be in a room that small for that amount of time. But at the end of the day, we did some great mixes there. Nick and myself are perfectionists, so we never let anything out of the studio unless we're really happy with it.

The bottom line is that with all the tracks we did back then, even though we were working in a confined space, we were really happy with the end results. So, just because you work in a small place, you can still get the best results. And, you can have the best studio in the world, but it's all down to your ideas and what you come up with and what the end result is. You can have a two-million pound studio, but if you don't get the results, it's not worth anything, is it?

Do you have a studio set up in your own home, John?

DIGWEED: At home, I just have an Akai MPC 3000. I can do sampling and mess around with drum loops and stuff like that. It's just an ideas kind of thing.

What about the latest studio you and Nick are working in?

DIGWEED: It's a bit more airy and bit more conducive to [working]. It's also nice to go somewhere and then come back to the studio. When we were in Nick's home space, we didn't realize that so much stuff was coming in, and it was like, we're getting by. But it came to the point where we thought, well, getting by now is hard work because this is too small.

Nick, how did you first get into producing and programming?

MUIR: Well, I'm a keyboard player, really. But I got myself a computer when I realized they were starting to get used a lot in studios in the late '80s. I got myself an Atari, like everybody did, and taught myself how to sequence a little bit. I had, originally, just a 1040, and I used C-Lab Notator software. I absolutely loved that system. I think the Atari worked brilliantly well for sequencing. It's still one of the tightest machines I've ever worked with.

Tight?

MUIR: The Atari actually had the MIDI built in, so there was no MIDI interface you had to deal with. And the Notator software could

address the architecture of the computer directly. It would bypass the operating system, so that seemed to have a beneficial effect on the timing, to me. The machine seemed to squirt out the MIDI really tight and in the same order every time.

What has since changed about your computer set-up?

MUIR: Well, the next big thing is that it's become feasible to record audio and use it alongside MIDI. The Atari wouldn't have had a hope of recording audio—the technology just wasn't there, the hard drives weren't there. But now recording audio to computer is a regular occurrence. I upgraded to the Mac because of what you can do with audio. The audio side of it has been a real revaluation in the last two or three years; it's really come on in leaps and bounds. That's made it irresistible to get a Mac, basically.

When did you get your first Mac?

MUIR: In 1994, with Logic Audio, when it first came out, but I didn't get on with it too well. It was buggy [in] those days. So I sold it. But I got this G4 that I have now a couple of years ago, and I've been working with that and Logic Audio ever since.

Can you take me through a typical Bedrock recording scenario?

MUIR: Well, invariably, John will come down and we'll listen to some stuff. He'll bring some records he's recently got. We'll listen to that and maybe some older stuff and see what we like about the tracks. Then I'll go over to the computer and keyboards and just start fooling around with stuff. I'll invariably get some kind of rhythm together, even something basic, and we'll start fooling around with sequences and sounds. I'll play in a line and listen to that a little while, and then I'll try changing the sound and maybe take a few notes out and put a couple in. We'll get maybe two or three sequences we like and then start to arrange those a little bit—bring some stuff in, take some stuff out. John's a DJ, so he needs certain things to happen in the track.

What new pieces of equipment have you added to your studio since moving most recently?

MUIR: I bought a Yamaha O2R digital desk, and Mac G4. And I've got old analog synths, which I've used a lot over the years, like the [Roland] Juno 106 and the Juno 60, but I thought they were starting to sound a little bit soft. I wanted something a bit more punchy. I got an Access Virus, and that's proven to be a good purchase. I love the sound it makes. It's a big synth—not physically, but there's just a lot you can do with it. It's very flexible, and it's got a real nice tight punchy sound.

Nick, what do you think John brings to the production process as a DJ?

MUIR: I do a lot of changes in sounds sometimes, and I'll have the MIDI Out going from my keyboard, and I'll record changes, like I'll open and close the filter on the keyboard, but I'll get John to do some of this. This is what he does when he DJs. He's good at working over a period of time, and he knows when a track should rise or fall, so I'll get him to sort of intensify things and then maybe make them die down.

If I were sitting there playing the piano, I would get the expression into the sound by how heavy, or fast, I'm hitting the keys. But with a synth, one of the extra things you've got is you can open and close that filter to intensify the sound or make it softer. What we're trying to do is get some of his expression into the track.

John, who are some of your influences?

DIGWEED: Obviously early David Morales mixes [are] amazing stuff. And Danny Tenaglia. I'm also really into some of the Deep Dish stuff. Just a lot of stuff across-the-board, really.

Nick, who are some of your influences?

MUIR: My influences have changed over the years. These days, the people who influence me the most are contemporaries. James Holden is doing some great work these days. I love what Evolution [who Bedrock have remixed] do, and I listen to Underworld, who have great records. Second Toughest in the

Infants is a fantastic record.

We really enjoyed remixing "Cowgirl" [from Underworld's *Dubnobasswithmyheadman*]. The thing is, that is definitely one of our favorite tracks, a track I remember dancing to in 1992, '93, at 7 o'clock in the morning. So to actually get to remix that was quite something. It's odd when there's a track you know and love so well, and then you get the parts sent to you; it's a very humbling experience.

Also, I used to really like Hardfloor. I loved the way they worked with the little Roland TB303, the silver acid box. That goes back to 1988, which was when dance music in its current incarnation kicked in big. In those days, a lot of music would be called acid house, and one of the sounds of that era was the 303, so all those lines became known as acid lines. It was that original squelchy sound, and Hardfloor worked with three of those machines.

John, you have you been favoring any kinds of music for sampling lately?

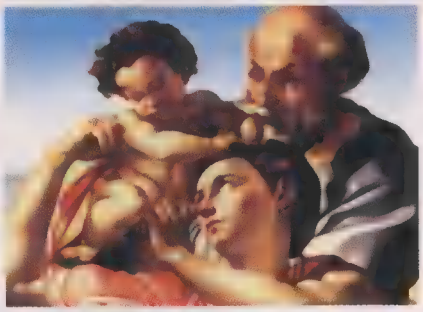
DIGWEED: Not really. There's no set game plan, ya know? It's more like you hear something and you think, yeah, that'll work. Because by the time you put it through loads of effects and mess around with it, it ends up sounding totally different to what your original idea was anyway.

It seems there's still so many people who still have no idea what electronica or house music really is.

DIGWEED: Yeah, I'm not trying to sell these records to everyone. I'd rather if people discovered them if they want to be into them, rather than force them down people's necks. I think the main thing for me is the music that I make, and the clubs that I play, are very much for an underground scene. There's a certain crowd that comes to support this music, and comes to listen to it week-in and week-out. I'm not that bothered whether the masses are going for it. I know there's a crowd that's into it, and I'm making records for them, and I'm not trying to crowd-please people that have never heard or don't understand what we're doing. The main thing is to concentrate on the people who have been supporting this music since day one.

How can a home studio benefit a novice?

DIGWEED: For budding producers, a home setup is a really good way to start. If you find that you're doing stuff and it's working out, and you need to expand to a bigger studio, you can do that later on. But for starting off, it's a good way to find out whether you're into it and whether you're getting results. And also, you have a chance to annoy the neighbors.



renaissance ibiza
mixed by deep dish

DEEPDISH: RENAISSANCE MEN

The guys in Deep Dish—Ali "Dubfire" Shirazinia and Sharam Tayebi—were born in Iran, but they didn't meet one another until 1991, while mixing at the same party. A year later, the two Washington, D.C., DJs began working together, launched Deep Dish Records, and produced "A Feeling" by Moods. By 1994, the year they started their sub-label Yoshitoshi, Deep Dish had become a top DJ team in the DC area, and by 1996, they had gained worldwide recognition with their *Junk Science* LP.

Nowadays, perhaps no American DJs enjoy more international acclaim than Ali and Sharam, whose deep, progressive, and soulful house music appeals to a wide range of clubgoers and arm-chair electronica fans alike. Recently, the group did a startling remix of Madonna's "Music." Around that time, Deep Dish released the sprawling, double-disc mix collection *Renaissance Ibiza*.

And at press time, the group was remixing the Dido song "Here With Me." Also due out soon is their double-disc mix collection *Yoshiesque Two* (*React/Yoshitoshi*). Ali took the time to discuss their approach to recording, all of which takes place in his basement home studio.

Who usually starts the recording process when you begin a track?

Since the studio is in my house, and I have more of a technical background, I usually start. I'll do a lot of the sampling and programming, and then Sharam will come in and do a lot of the arranging, and we'll just sort of go back and forth until we finally get it right.

How did you begin working on Renaissance Ibiza?

Basically, we got together at my house with a few boxes of some of our favorite records and tried to mix and match some of the ones we thought were sort of classic.

What was it like remixing Madonna's "Music"?

It was very enjoyable. The original producer, Mirwais, had a lot of really interesting digital sounds and effects going through the mix, so we had a lot of cool elements to work with.

Did you actually come in contact with her?

Right around the time she asked us to DJ her performance in New York [late last year], we spoke to her on the phone about what she sort of wanted, and then we did two days of rehearsals in New York and kind of hung out with her then.

What musical ideas do you present with Renaissance Ibiza?

I think we just basically captured some of the flavors of the month. What we try to do with our mix CDs is try to highlight actual songs, 'cause when you're DJing, you normally have about five or six hours to play and you tend to have a lot of great records, but in between those great records, you'll play a lot of what we call filler tracks or segue tracks, which lead one great song into another and only sound good in clubs. But you can't really put those on the mix CDs. On the mix CDs, we have a condensed version of what we sort of sound like in a club setting, and we really go out of our way to make sure every song is not a filler track, but a song that will stand the test of time and sound great in clubs and in your home.

What equipment do you have in your home studio?

We use K2000 samplers from Kurzweil. We haven't bought too much new and updated equipment; we basically use an old analog board and we sort of like the simplicity of using some of the older equipment. We've got an old Korg Monopoly, a Jupitor 6, a Nord Lead. We like to keep it simple.

How has your home studio developed over the years? Has it changed much?

Not that much. We're still running an old version of Cubase, and I still got a Mac, a 9500 that I bought like six, seven years ago. And I haven't really upgraded its system software. The problem with us is we're so busy and we have so little time to actually sit down and troubleshoot and update our equipment, so we tended to have just left it the way it was from years ago. I started the home studio around '93. But we're actually in the process of renovating studio space above our record store in D.C., and that's gonna be a state-of-the-art studio and we're gonna keep the one at my house sort of low-fi and low-tech.

Did you have any models to follow when you were setting up the home studio?

We have a lot of engineer friends in D.C., and I've been good friends with Brian

Transeau [BT]. So I had an idea of how to set up my studio just from having worked alongside him for many years and seeing how he did his studio setup.

What do you shoot for in sound quality?

We don't like our music to sound too precise, so we haven't really been into the whole digital-board revolution. We have an analog Mackie, because we like to sort of go to DAT live, throwing effects in and out of the mix randomly to make the music sound more organic and alive. That's what we try to do with all of our records. When you tend to do everything using electronic instruments and synthesizers and stuff, you can sound too precise and linear, and we like to sort of stay away from that.

Do most of your contemporaries from the D.C. house music scene have home studios?

Yes, most of them do. Having a home studio must give you the luxury of working when you want to work, as opposed to booking time.

We used to actually use our studio as a preproduction studio because we weren't really confident engineers, and then we would run everything onto the ADAT and go to New York to one of the big studios and use an SSL and mix our records down with an engineer, which was cool at the time. But we ended up spending about five or six thousand dollars on a remix, and we weren't necessarily getting that much money [in pay back]. We ended up blowing most of the budget. And you're on the clock when you do that, so it's really hard to focus and be creative. Having it in your house, you can basically work on something and when you get sick of it, go watch TV or whatever and then come back to it later with fresh ears.

And how do you feel about DJing when you have to be in so many places throughout the world for gigs?

The traveling stinks, but the actual gigs are great. The fact that we're playing so often helps us as far as working in a studio goes, because we get a chance to listen to the latest records, to hear how these records sound in clubs, and that definitely helps us when we're actually mixing down.

You must listen to your mixes with various kinds of speakers.

Yeah, we have some really nice Genelec speakers, which are pretty expensive, and we use them basically when we want to really crank our mixes and see how they sound really loud. But I usually mix down on a pair of really cheap Yamaha NS10s, which have pretty much become our studio standard. If you can make your mixes sound good on them, you can rest assured that they'll sound great. We also listen to stuff in the car.

How does the car stereo come into play?

It works great. You make a tape and go for a drive. Because you spend a lot of time in your car anyway listening to CDs or the radio, you sort of have an overall idea of the dynamics of how things should sound. These are all forms of A/B-ing—seeing how your mix sounds on different systems.

Do you find yourself becoming obsessed with the gear—fixing it, buying it, etc.?

I always say this to people: It's not really what you have, but how you use it. It's all about translating the ideas in your head into something that somebody can listen to. As long as you have a basic sampler, basic effects, and a basic idea of how to record something, you're more than halfway there. HR

REVIEWS

LOGIC AUDIO PLATINUM 4.7 (PC)

POWERFUL FEATURES, POWERFUL RESULTS

By Thad Brown

For years, the primary claim to fame for Logic Audio Platinum, the flagship digital audio sequencer from German software giant Emagic, was its industry-leading integration for Digidesign's Pro Tools systems. Logic plus Pro Tools has been the preferred sequencer for MIDI-intensive productions that also needed high-end digital audio tracking and editing. Platinum still supports Pro Tools, as well as a few other dedicated recording systems, but more and more of the action in Logic revolves around its native audio recording and processing features. It's also a program that's constantly on the move. I looked at the latest version, 4.7 ($799), but 5.0, due out in September, is just around the corner.

The Overview

Like every modern digital audio sequencer, Logic includes a vista of capability and power limited only by the machine on which it runs. Functionally unlimited MIDI tracks work with up to 64 audio tracks. The Logic Environment provides deep, user-configurable MIDI editing and control. When used with a supported Emagic MIDI interface, MIDI data can be sent to external devices through a proprietary system called Active MIDI Timing, which Emagic claims dramatically improves timing over that

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available with other interfaces. Standard Windows MIDI drivers are also supported, but without the benefit of tighter timing available with the Emagic interfaces. Audio tracks can be routed through a wide variety of included Logic Native plug-ins, along with any installed DirectX and VST plug-ins.

For audio hardware, Emagic has its own proprietary audio system (EASI) and manufactures two audio cards. A few other cards also have EASI drivers. However, the large number of users who already have a card should be fine. Logic supports ASIO, DirectX, and Direct I/O, which means it supports pretty much every audio-card driver out there. Finally, Emagic also makes a suite of sampling, synthesis, and editor/librarian applications that are designed specifically to work in tight integration with Logic.

Installation and Setup

The impressively filled Logic Audio box includes a program CD, a hard-copy manual with a snazzy three-ring binder to hold it, a separate installation guide for Windows, a hardware dongle, and promotional and registration material. The single CD installer set up Logic on my Athlon PC without problems. The setup and installation guide is clear, and includes solid suggestions for optimizing a PC for audio work. (One strange event, however, was that Logic *really* wanted to set the v-cache setting in my system.ini to a particular value. Sadly, another application also had some fairly strong opinions about these settings. Such is life when working with computers.)

My PC has been mostly an audio box, with the Mac doing the sequencing work, so the MIDI installed on it is fairly minimal, consisting of the 32 channels of MIDI included on my Frontier Designs Dakota card. Getting Logic to see the audio and MIDI hardware on my computer was no problem. The program sensed both the ASIO driver and MIDI I/O immediately. The hardware dongle attached to a serial port also worked perfectly each time from the start. As software setups go, Logic was painless—certainly not perfect, but not nearly as difficult as some.

Environmentalism

The double-edged sword of using Logic can be summed up in two words: Logic Environment. Everything—and I do mean everything—in Logic is about the Environment, and to get your head around it is to get your head around Logic itself. So, what is it?

It's a lot of things and it's all of them at the same time. The Environment includes objects for every MIDI device in a studio, as well as every MIDI hardware input and output. The Environment has transformation tools for MIDI data that can be dropped

into recorded or live MIDI data. It is also where audio busses, sends, and software synths and samplers live. An example of how Logic "thinks" is that the virtual channel strip that is in nearly every digital audio application in Logic is actually an Environment object. So, the Environment can be a MIDI router, a drum mapper, an audio mixer, a plug-in holder, a bussing scheme, and a way to access installed hardware. In fact, not only *can* it be those things, it *must* be those things.

Setting up the Environment for your personal studio takes some time. This is because the process involves routing audio and data with virtual cables to virtual objects that represent the hardware installed in the computer and the MIDI devices in the studio. However, it only needs to be done once. After the environment is set up, it can be saved in the default song so that every time Logic starts up, all of the pieces of gear in the studio are there and ready to be used. Logic's reputation for obscurity stems largely from the fact that the Environment setup has to be finished before much can be done with the program. However, patience will pay off, and I don't think any digital audio sequencer offers anywhere near this level and depth of user control. Once the Environment is set up, the whole studio is available through Logic, which gives the program a distinctly hands-on feel for the entire rig.

Making Tracks

After getting the Environment set up, recording MIDI and audio is as simple and intuitive, or as difficult and unintuitive, as almost any other program. Select a track of the right type for what is to be recorded, define tempo and metronome information, and hit record. All of the usual tools for loop recording are supported, and MIDI data can be step sequenced as well. Basic MIDI and audio "block" style editing is easily accomplished in the arrange window, where pieces of audio and MIDI data can be freely moved about, copied, pasted, and otherwise manipulated. Logic offers impressive advanced editing capabilities in both the audio and MIDI realms. Most MIDI editing is achieved via the Environment, where real-time changes and data filtering can be done by cabling Environment objects into the signal path. For audio, Logic includes destructive sample editing tools that rival those of dedicated sample editing applications.

Logic also offers impressive real-time processing options for audio. Emagic ships its own set of Logic-only audio plug-ins, and DirectX and VST plug-ins are also supported. I had no serious problems using any of the DX or VST plug-ins installed on my PC, though the list I use is far from exhaustive. The native Logic plug-ins, however, are top quality and include compressors, EQs and filters, tempo-based delays, and some very nice time-domain phaser/flanger/chorus effects. Full mixes could certainly be accomplished using only the built-in effects in Logic, though some extra realtime goodies are always welcome. Parts, tracks, and full mixes can always be bounced down to individual tracks. Printing the effects will free up more DSP resources if your processor starts to strain.

Getting Along with Others

Some users have had trouble getting Logic to work with third-party plug-ins and virtual instruments. Some VST instruments would not work, or would only work in a very limited way, and MIDI data didn't always reach its virtual instrument destination. Version 4.7 has largely solved these problems, although some snags are still evident.

Most VST instruments will only spit out a stereo output. This is not a problem for some modules, but not great for something like a drum sampler, where individual mixes of kick and snare sounds are needed. However, all of the VSTi toys that I tried did work properly with some limitations, and Emagic has stated that version 5.0, due in September, will have further improvements in VSTi support.

If you are very committed to a particular software synth or sampler, you might want to be sure it will work properly in Logic. Just keep in mind that, for sampling in particular, the EXS may make you forget pretty much any other software sampling option out there.

Is Logic for You?

What sets Logic apart from the rest of the competition is the level of control afforded to the user. Logic can be made to work in a way that is best for what you want to do with it. It takes time to set up, but once it is, it's a pleasure to work with. Like all current digital audio sequencers, it can do astonishing things when paired with a powerful computer. Logic was also rock-solid running under Win98SE. I did not experience a single crash, and I had it slaved to timecode most of the time. In addition to Logic Audio Platinum, Emagic also sent me a copy of their EXS 24 software sampler. The integration of the EXS software sampler really makes Logic a pleasure to use. Logic is top-quality Windows audio software—and a real achievement. HR

T-RACKS 24 MASTERING SOFTWARE

FINISHING WITH THE MIDAS TOUCH

By David Darlington

You've tweaked your mix until it's as good as it gets. You've pushed your mixing skills to the limit. How do you take your final output to the next level to compete with the pro CDs in the marketplace? IK Multimedia has made it easier with T-RackS 24, a $299 mastering package designed to restore warmth and "tube" quality to your digital mix while offering all the features available to a pro mastering engineer.

Interface Fun

The T-RackS 24 interface is deceptively simple. All the action takes place in one window. You simply open your digital audio file and begin processing. The "transport" controls are easy to understand, and you can audition various parts of your file quickly. You can drop markers along the way and then jump from one to another, or grab the drag handle to get to any point easily. A loop function and return-to-zero button round out the transport. The processors consist of a parametric equalizer, a "tube" compressor, a multi-band limiter, and an output stage that allows soft-clipping to emulate analog tape saturation. T-RackS handles 16- and 24-bit files, and supports Wave, SD2, and AIFF files on Mac or PC.

The equalizer stage boasts six bands of parametric EQ including low-pass and hi-pass filters, low and high shelving bands, and low-mid and hi-mid peak bands. On the peak bands, switches toggle between low and hi "Q" or bandwidth. The frequencies of each band overlap by a sizable range, so there is much flexibility in the way you can shape the tone. The resulting frequency response curve is displayed on a scope-like graph. A frequency readout lets you zero in on the parameter you're tweaking, and separate enable buttons for each band are a welcome feature. Very few hardware EQs can offer that flexibility!

What I found impressive about T-RackS 24 was the quality of the sound processing. Adding EQ seemed to "pump up" my file without making it sound harsh or scratchy. The graphic knobs were easy to work with, and the readout reflected what I was hearing as I adjusted the controls. I was happy to find that I can use T-RackS 24 to process individual files as well as master mixes, because I can use it as another EQ in my mix arsenal. The EQ can be inserted before or after the compressor by selecting an appropriate "patch" button.

Next comes the compression section. This section emulates older soft-knee tube compressors in that the compressor is always switched to the "in" position no matter what the level. There is no "threshold" control, only ratio. Compression amount is controlled by the input and output levels. The more input, the more compression. You can adjust how quickly the unit reacts with attack and release controls, but basically the fine-tuning is done with input and output like an old LA2-A or Urei 1176.

There is an interesting Stereo knob that controls the width of the overall image. You can check the result in mono by flipping a switch on the output section. The compressor was just a bit tricky to set—it's very easy to overdo— but the results are warm and punchy. I was able to increase the apparent loudness of my mix and also gain some clarity in the midrange with a bit of tweaking. The sound stayed warm and didn't get tiny or overcompressed.

To the Limit

The limiter's controls are very simple. There is an input drive knob that controls the amount of signal into the limiter, a release control to set release time, and an overload knob that determines how much of the peak will be limited. The deeper parameters are accessed through a text file called default T-RackS.txt. I found the default settings to be very musical, but it's great to be able to adjust the internal parameters to suit various types of program material.

Finally, there is the output stage, where you can emulate tape saturation and increase the loudness of your mix to optimum levels. Over levels can be observed on a large meter, and there are also LEDs to show clipping levels. Here, there is also a balance control to compensate for any left/right discrepancies. Once you've got all your parameters set, you simply rerecord it by hitting the "process" button. This is when you will dither down a 24-bit file to make a 16-bit CD-ready master.

T-RackS 24 comes with a variety of useful presets, but as with most gear, I found it easy to navigate by simply poking around and listening to the effect of my tweaks. The interface of T-RackS 24 is user-friendly and clearly laid out. The warm tube-like sound and convenient controls make this a solid tool for taking your master mixes to the next level. HR

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BEHRINGER TRUTH B2031

SET YOUR EARS FREE

By Rusty Cutchin

In the ongoing powered monitor wars, a new steely-eyed veteran has joined the fray, full of German ruggedness, discipline, and...*style*? Yep. Behringer, best known on these shores for its rack processors (the Ultra-Maximizer is a fave tool for finalizing), has been branching out and rejuvenating its presence in the States with guitar amps, rack-mount mixers, and now studio monitors. The Truth B2031 is the company's first powered monitor, and a pair makes an exciting and unexpectedly good-sounding system. The name the company has chosen for their line of studio monitors is particularly apt, because these Behringers ring true on several fronts.

Truth in Design

The 31-pound B2031s feel lighter than they actually are, and they're easy to set up. They accept analog balanced XLR or balanced 1/4" inputs. Set up the boxes, plug in the power cable, plug in the audio, turn 'em on, and you're ready to go. Behringer has powered the biamped system with 150 and 75 watts for the woofer and tweeter respectively. The long throw 8¾" woofer and ferrofluid-cooled dome tweeter provide the monitors with a rated frequency response of 50 Hz to 20 kHz, although the lows seemed lower. Modern hip-hop and dance music, which often contains ultra-low 30 Hz boost on 808-type kicks and synth bass, seemed to reproduce accurately when these monitors are cranked.

A built-in limiter protects the components from signal overload, and the monitors are designed for wide dispersion, which is another truth about the Truths: They sound equally good from several vantage points. Behringer tests each unit for compatibility before packaging them as matched pairs. The units are symmetrical and can be placed on either side of your listening position.

The "Sweet" Science

Modern monitor design and technology has resulted in several models from well-known companies with varying sonic characteristics, all of which could be deemed "accurate," the most important criterion for ensuring your mix sounds the same as it is played on different systems. I don't believe that accurate has to mean brittle or unpleasant sounding, and, for me, the Behringers are wonderful monitors for long-term mixing (the kind that makes your head explode after a long session with other monitors). The B2031s sound sweet. But how sweet is too sweet? For me, they don't cross the line—the line that separates a rich, accurate monitor from a flabby, scooped-out consumer model. Any kind of music I pumped through them was reproduced with powerful transparent bass (a good barometer for exposing flaws) and crisp upper mids that didn't soften aggressive sounds designed to cut. Think Tannoys or KRKs rather than Yamahas or Genelecs.

Nothing but the Truth

Right now the Behringers are the monitors of choice here in our testing studio, and we plan to hang on to them. Definitely try to audition B2031s if you're looking at powered monitors to be the backbone of your mixing system. Although you'll find other well-known names (and certainly more expensive ones) in this price range, I don't think you'll be any happier listening to them. I could mix with these for a very long time and be confident in the results. In other words, you can depend on the B2031s when you really want to know *what's up*. True. HR

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TASCAM US-428

ONE-PLUG AUDIO

by Rusty Cutchin

Over the last year, TASCAM has done a remarkable job in designing and releasing products targeted to the specific needs of the project-studio world. Much like the rejuvenated Apple under Steve Jobs, TASCAM has captured attention with cool designs and products that filled the voids and made it to market more or less as scheduled. Cases in point: the MX-2424 stand-alone multitrack we reviewed last month, the 788 Digital Portastudio, and the upcoming DM-24 digital mixer.

But for my money, the best combination of usefulness and value lies in the sleek, sweet US-428 USB Workstation Controller, which is much more than a controller. In implementing 4-channel audio recording via the Universal Serial Bus (USB), the US-428 has achieved the three Cs of successful computer audio products: control, convenience, and compatibility.

Techno-Trinity

If you've been interested in a dedicated controller for your audio software—you know, something with faders, knobs, and buttons instead of a mouse and keyboard for *everything*—you can't go wrong with the 428. Working with Frontier Design Group, best known for its line of audio cards and interfaces, TASCAM has given the 428 enough touchy-feely tools to let you practically put away that mouse. Eight faders, bank switching, a rotary data knob, and, of course, dedicated transport controls give you quick access to the most commonly used controls of your audio software. Two separate MIDI paths give you access to 32 channels or MTC on its own stream.

But control is just the beginning. The 428's audio features provide convenience that even owners of dedicated audio cards will find interesting. The unit features two analog converters (selectable 16- or 24-bit), two XLR inputs, two balanced TRS inputs for guitar and bass, two switchable balanced line inputs, S/PDIF in/out, dedicated EQ, aux send and pan controls, and the mixing section, which allows switching among banks to access eight channels at a time. The unit is convenient with a capital C, allowing easy desktop access to mic, keyboard, or MIDI cables.

One audio caveat: There's no phantom power, so a condenser mic will need an outboard preamp. There's also no LCD, but LEDs above the controls give you a clear understanding of the unit's status. However, the USB features alone—hot swapping, four 24-bit audio channels without an audio card, and high quality audio for iMacs—justify the price.

Compatibility with all USB-equipped Macs and PCs extends to an assortment of software DAWs as well. The unit ships with Cubasis for PC. At press time, TASCAM was including Peak LE, pending availability of Cubasis for Macs. But drivers for other programs, including Digital Performer, Pro Tools, Cubase VST, Nuendo, Deck LE, and Logic Audio, are available through TASCAM's US-428 page at *http://www.tascam.com/products/us428*. You can also find an assortment of untested (TASCAM doesn't endorse these) drivers developed by third parties for other programs.

USB for Me

I was delighted to find support for Digital Performer on TASCAM's web site and immediately downloaded the drivers after installing the US-428's own software, which was a breeze. There's a control panel that sets the unit's modes (it will work with Sound Manager audio, and can be configured there to emulate a Pro Tools controller), a file for DP's plug-ins folder, and an OMS driver. When those are in, the unit becomes available by selecting it in Digital Performer's Hardware Setup window. The 428's manual is well-written, easy to understand, and *simple*. I know most of Digital Performer's keyboard shortcuts, and yet it was fun and effective controlling the program from the 428.

Plus, 24-bit audio overdubs sounded just as good as those from my audio card. (With FireWire interfaces now appearing as well, can the days of card installation be numbered?) Add up the three Cs for yourself, and then take another long look at the US-428. There's another C—*cool*! HR

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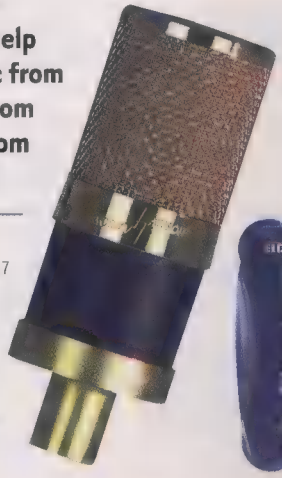

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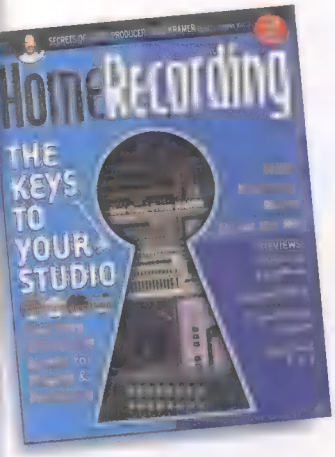

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TASCAM US-428

ONE-PLUG AUDIO

by Rusty Cutchin

Over the last year, TASCAM has done a remarkable job in designing and releasing products targeted to the specific needs of the project-studio world. Much like the rejuvenated Apple under Steve Jobs, TASCAM has captured attention with cool designs and products that filled the voids and made it to market more or less as scheduled. Cases in point: the MX-2424 stand-alone multitrack we reviewed last month, the 788 Digital Portastudio, and the upcoming DM-24 digital mixer.

But for my money, the best combination of usefulness and value lies in the sleek, sweet US-428 USB Workstation Controller, which is much more than a controller. In implementing 4-channel audio recording via the Universal Serial Bus (USB), the US-428 has achieved the three Cs of successful known for its line of audio cards and interfaces, TASCAM has given the 428 enough touchy-feely tools to let you practically put away that mouse. Eight faders, bank switching, a rotary data knob, and, of course, dedicated transport controls give you quick USB features alone—hot swapping, four 24-bit audio channels without an audio card, and high quality audio for iMacs—justify the price.

Compatibility with all USB-equipped Macs and PCs extends to an assortment of software DAWs as well. The unit ships with Cubasis for PC. At press time, TASCAM was including Peak LE, pending availability of Cubasis for Macs. But drivers for other programs, including Digital Performer, Pro Tools, Cubase VST, Nuendo, Deck LE, and Logic Audio, are available through TASCAM's US-428 page at *http://www.tascam.com/products/us428*. You can also find an assortment of untested (TASCAM doesn't endorse these) drivers developed by third parties for other programs.

USB for Me

I was delighted to find support for Digital

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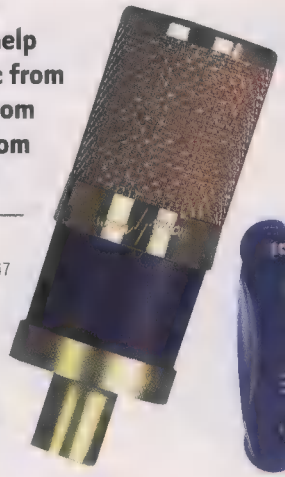

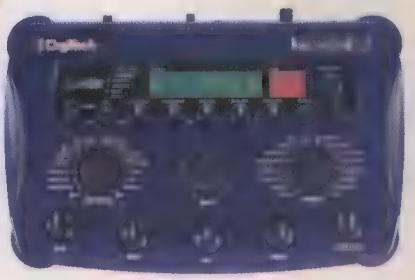

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BATTERY boasts separate sound parameters for 54 sample cells, powerful modulation capabilities, and unbeatable ease-of-use. With its sample-accurate timing, internal 32-bit resolution, and up to 128 velocity layers per cell, it fulfills the highest demands regarding precision, sound quality, and flexibility. **Retail Value: $199**

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IN THE LOOP

NEW DISCS FROM SPECTRASONIC, BIG FISH, AND KEYFAX

By Thad Brown

Metamorphosis

Morphed B-b-beats from Spectrasonic

The booklet that accompanies the four CDs in the metamorphosis package claims, "It's almost impossible to go a day without hearing the work of Eric Persing." Looking at his credits only as a voicing expert for Roland, you'd be hard-pressed to argue with that assessment—he's probably worked on every Roland you've played. Persing's ubiquity doesn't end there, of course; he has been producing top-selling, well-respected sample libraries for years as well.

Metamorphosis is very much a "personality" library, and the personality behind it is Persing. All of the loops, sounds, and samples were created by him using pretty much every cool audio software toy known to man, along with a bucketload of cool synths and outboard effects gear. The gear list is quite intimidating, even to a gear whore like myself.

Metamorphosis, as its name suggests, is a library of transformed and mutated sounds. Coming from a famous sample head and synth geek like Persing, the sounds have a decidedly electronic bent to them, not surprisingly. This is not to say that there are no acoustic drum timbres to be found, but this is certainly not a library for people looking for straight loops to replace a live drummer.

With any library that leans heavily on processed sounds, there's a built-in difficulty of making the sounds fit into your own music. Often, sounds on such packages are so processed that not much else can be done to add any personality after the fact. While some sounds on Metamorphosis are probably too mutated to edit, most are adaptable. (And, of course, when all else fails, apply filters.)

On the four included CDs, loops and grooves are saved in four formats. Impeccably looped Wave files can be imported into any sequencer, DAW, or sample editor. "Normal" sample banks, where loops are assigned to adjacent keys, follow. Groove Control versions of all loops are next. Groove Control loops are loops with included MIDI files that trigger specially prepared stereo samples. The MIDI files can be quantized, edited, and tempo-matched up to 20 bpm from their original tempo, and the triggered samples still sound good. Simply put: Groove Control rocks—you'll love it.

Next, Metamorphosis has all of the loops in what they call "groove menus." Groove menus have full grooves mapped across keys at the same tempo, making it easy to match up full grooves to any tempo by old-school pitch shifting of the loops. The impressive booklet explains how to use each format.

Metamorphosis contains a stunning array of sounds and loops. Tempos range from 53(!) to 164 bpm, and sounds range from ambient textures with a touch of rhythmic content to aggressive loop sounds. Extensive use is made of the stereo field in many loops, with parts moving in time across the soundstage. A fair number of loops include multiple versions of the same basic loop. These sounds will fill the needs of film and sound-for-video editors, electronica musicians, and hip-hop artists. Metamorphosis is an ambitious package that succeeds marvelously, with great sounds, exceptional versatility, and killer programming. It's booty-shaking good. *www.ilio.com/spectrasonics/*

Megaton Trance Bomb

Dance-floor beats and sounds from Big Fish Audio

In the constantly changing world of dance music genres, trance has had a comparatively long life. Though there are permutations and shifts just like any kind of music, the mixture of drum machine beats, static pulsating bass lines, and swirling synth sounds has enjoyed real staying power. With perfect-for-three-in-the-morning tempos around 130 bpm and masterful mutes, solos, and builds, this form of music has exploded.

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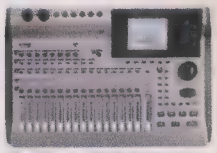

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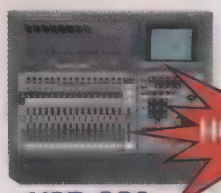

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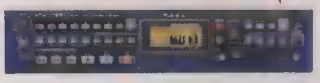

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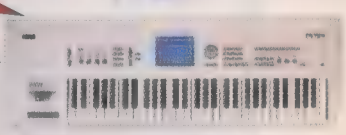

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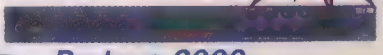

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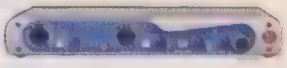

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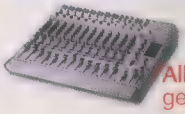

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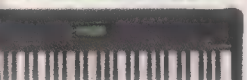

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of Megaton releases from Big Fish Audio. I've been a big fan of some of the Big Fish hip-hop libraries, so I was interested in finding out how the trance library stacked up.

The CD package consists of two audio CDs and a small booklet for the CD insert. The booklet includes license information, basic info about the producers of the sounds, and a listing of tracks, tempos, and key signatures. The tracks on the CD are almost all construction kits, with a full mix played then individual parts played back.

In addition to the construction kits, there are also a few tracks each of arpeggios and drum-kit samples. This makes it comparatively easy for you to mix and match parts from the sample CD with your own tunes. Most of the tracks exhibited solid beats and progressions, with particularly good drum programming—the drums alone might be enough to make it worth the purchase. Unfortunately, some of the best drum elements, like some backward samples and swells, are not broken out individually in the construction kits, making them less useful than they could have been. The synth sounds and programming are also very good and should provide useful sounds or, better yet, inspiration for new sounds.

Genre-specific libraries such as this always suffer from trying to stay current in the mercurial world of dance-music production. This library has lots of useable sounds for experts, and the construction kits allows beginners a peek behind the curtain. If trance is on your flight plan, this is a fine place to land. *www.bigfishaudio.com*

Hip-Hop Shop

MIDI grooves and phrases from Keyfax Software

Audio loops and samples are great things, and once you've used them, it's hard to go back to pale synth emulations. However, audio loops do have a drawback in that they always sound the same, and though changing the groove and feel within a loop is possible, it can be difficult and time consuming. Although not as large as the audio and sampler market, this reality has produced a need for pre-fabricated MIDI files. As the name suggests, Hip-Hop Shop is a collection of MIDI files designed by and for hip-hop and R&B programmers, producers, and mixers.

Remember floppy disks? Okay, now, remember when you could actually fit something on a floppy? Hip-Hop Shop is nothing more or less than a floppy with slightly more than 60 standard MIDI files. Each of those MIDI files usually contains 16 loops or parts. Files are all General MIDI compatible, so they can be auditioned with practically any synth or soundcard out there. Each file also contains a "setup" track that sends GM patch change, controller, and sometimes filter information to the target tone generator. The Readme file that accompanies the MIDI files has short descriptions of every MIDI file and suggestions for performance and sound tweaking.

The files themselves are nearly all quite good. It should come as no surprise that the drum grooves lean heavily on 808 drum-machine style loops, funk-oriented breakbeats, and some live-feel jazz performances. Bass sounds are both synthy and electric, depending on the track, and groove nicely. Those bass and drum sounds are the meat of this collection, but it is rounded out by a sizeable dose of electric piano, vibraphone, guitar, and effects sections.

Pointing a bunch of somebody else's MIDI files at a Soundblaster card is, of course, not the way to chart-busting success. In fact, it probably won't even get decent download numbers on MP3.com. Props to Keyfax for suggesting ways to use these files creatively and repeatedly telling the customer to do so. I found a number of these files to be excellent when pointed at high-quality outboard synths or software synths. They are also great sources for groove-quantizing files played by live players that need a little help. At this price, these performances are a real bargain and can be a great way to spur ideas and spice up tunes. *www.keyfax.com* HR

CONTINUED FROM PAGE 22

waveform will be displayed. By moving the cursor to the Start or End fields in the display, you can adjust the start and end points of the playback region. Audition your work using the Enter button on the far right. To permanently eliminate the unwanted parts of your sample, hit F8, or CUT, and then F7 to permanently alter the sample.

Organizing

Samples are arranged in a program in the Single menu (meaning single program). As with editing a sample, the Single button stays lit when you push Edit, indicating that you are indeed editing a "single" program.

Keygroups refer to the divisions of the keyboard that play a common sample, and each keygroup can play up to four layered samples. To get started, put one sample on a keygroup. To add keygroups, copy an existing keygroup by pressing F2 KGRP and scrolling to the field marked +/-. Hitting the + numeric key copies the selected keygroup while hitting the – key deletes it. Hint: Be careful in the field!

To select the sample for a given keygroup, hit F6, or SMPL. Here you see the MIDI notes, which define the range of the keygroup, and four fields for the layered samples. Scroll to the top field and turn the data wheel until you see the name of the sample you want to play. Next to the name of the sample, you will see TRACK, which means the sample changes pitch with the keyboard. Changing this field to CONST, or constant, tells the sampler to play the same pitch no matter which key is played within the keygroup.

The Playback field determines whether the sample will play fully to its end with a single MIDI note, play a loop, or play an envelope, which can be accessed via the F6 or ENV button. This editable envelope is a basic ADSR-type with an accompanying pictorial graph on the display.

The Multi window lets you select Programs and assign MIDI channels and outputs, as well as overall panning for the program and relative output level. In the Global page you will find overall tuning and basic MIDI channel settings. Now that you can get around these Akai units, dig deeper and you'll find a workhorse of a sampler with lots of great functions, like dynamic filtering, timestretching, and more. HR

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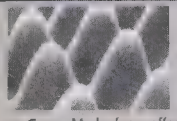

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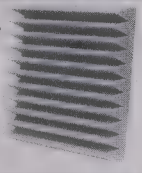

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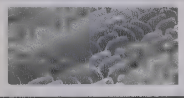

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COMPUTER CENTRAL

BY THAD BROWN

The 21st Century Mac

OS X: WAITING FOR APPS

Music making is part of what human beings do; it's at the core of what we are. Once man managed to eat, sleep, and reproduce, he started to sing, play, and make noise. Technology has been a part of this from the beginning. I'm confident that soon after the wheel was discovered, someone quickly figured out how to whack it to make a cool noise or how to use it to get to a gig quicker. Over the centuries, technological advances have been used to make new and better instruments, and now personal computers have become, literally, instrumental in music making. In fact, musicians and composers have been exploring the possibilities of computers and music since the machines had more tubes in them than Stevie Ray Vaughn's guitar rig.

Even so, home computers have only recently become powerful enough to get in the game, and Macintoshes have been the shock troops for this revolution. Although the Mac has held a dominant position in media production for years, the platform has been even stronger in music than it has been in the core publishing and design applications, the Mac's bread and butter. How did this happen?

The answer lies with applications. For various reasons, a few revolutionary programs were written exclusively for the Mac early on. Three of the most important were Pro Tools, Performer, and Studio Vision Pro. More important than the Macintosh operating system (MacOS) itself, these applications made music making on the Mac what it is today.

FLASH FORWARD

On the computer I'm using to write this, however, the version of the Mac OS is different. It's Mac OS X (pronounced "10"). The OS X box cover claims that it is the most advanced operating system available, and that may well be true. X matches the stability of some of the most time-tested computer code in the world (BSD Unix) with an updated look and feel built upon the classic Mac OS. As advanced as it might be, Mac OS X is also the first version in years of the Mac OS that will not run any of those bedrock audio applications mentioned above. No Pro Tools, Vision, Performer, Cubase, or Logic. No Peak, Spark, or sonicWORX. In fact, on the day I write this, it will not run a single multitrack audio recorder or even a DVD player. The reason for this is that "under the hood," Mac OS X has practically nothing in common with any other version of the MacOS ever written. So nearly every application needs some work to get it to run properly on the new OS.

HACKS AND FACTS

Audio applications will take more work than most applications, simply because they are often written with "hacks" that work around the Mac OS to enable high-end audio features. For example, Sound Manager is the Mac OS extension that allows 16-bit, stereo audio input and output. If an application (say an MP3 player) just spits out a stereo audio stream, then once basic audio is implemented in OS X, all that app needs to do is support the OS X version of Sound Manager. It will send OS X a stereo output and let the operating system do the rest. However, most of the applications we use to make music work with one or more audio systems that are written to take advantage of features like higher bandwidth, multiple channel audio, MIDI, and synchronization. Enhancements and utilities like ASIO, OMS, FreeMIDI, MAS, and Direct I/O are not written by Apple, and they will all need to be replaced or updated in order for audio applications to work properly under OS X.

When exactly these updates will be available, though, is not clear. Apple is promoting OS X heavily, and lots of smart minds think the future of the company is riding on this new operating system. Right now, OS X is mostly for tweakers and interested power users, but it will come pre-installed on all Macs starting in July. The problem is that the longer OS X takes to work with the big names of audio software, the bigger chance there is for Windows to make even more headway in the audio world. On the other hand, X really is a much better operating system. When the kinks are worked out, it should provide an extremely stable, high-performance environment for making music. Mac users will have to choose if and when they should move to OS X, but one thing seems certain—while the early bird gets the worm, it also gets the bugs. HR

LEVIN PFEUFER

PAST MASTERS

BY DAVID SIMONS

An "Eruption" of Talent

THE MAKING OF *VAN HALEN* (1978)

At the beginning of 1978, Warner Brothers Records went fishing around the clubs of downtown L.A. and hooked a young, brash quartet from Pasadena that called itself Van Halen. Despite the big hype, skeptics sized up the group's over-the-top first single, a cover of the Kinks' "You Really Got Me," and pronounced VH yet another band of big-haired blowhards. End of story.

Not quite. Though the now-dated cover suggests otherwise, *Van Halen*, issued on February 10 of that year, was, in fact, light years ahead of the crowd. Behind the band's macho swagger lay four supremely talented individuals who could play, sing, and write rings around the competition. Bassist Michael Anthony and drummer Alex Van Halen provided the most powerful hard-rock rhythm section since Jones/Bonham, and one run through "Jamie's Cryin'" proved that singer David Lee Roth possessed nearly as much vocal talent as he did chest hair.

But the real brains behind VH was the group's 22-year-old guitar wizard Edward Van Halen. Today, thirtysomethings can tell you exactly where they were the moment they first heard "Eruption," Edward's jaw-dropping amalgam of hammer-ons, whammy-bar dives, and scorching volume—performed from start to finish in a single, unplanned take.

The road to *Van Halen* began a year earlier, when super-producer Ted Templeman accepted an invite to check out the band (whose Gene Simmons–financed demo had already been rejected by scores of record companies) at Starwood, the local venue where the band had built a regional following. A contract was immediately offered and demo sessions arranged. "As it turns out, we didn't need the extra studio time," recalls Templeman's longstanding engineer Donn Landee, a veteran of Neil Young, Little Feat, and Doobie Brothers dates. "They cut 28 songs in about two hours. That's when we knew we had a band that could play."

On the first week of January 1978, Van Halen convened inside Sunset Sound's Studio One, ready to roll. In order to capture the raw energy of the group's club work, Landee and Templeman decided on a no-overdubs approach.

"This was their first time inside a major studio," remembers Landee. "But that actually worked to their advantage. We didn't want them to have to think—we just hung some mics, let them play, and got them out. We spent very little time in pre-production—we treated the entire first album almost like it was a demo itself. There are only a couple of spots where we added anything afterward—on 'Runnin' With the Devil' and 'Jamie's Cryin'"—and those were done in one take. Nor did we use very many tracks—I think Alex's drums were probably recorded using four mics total."

Templeman credits Landee with capturing the full-throttle essence of Edward's guitar, adding flourishes like the great echo effect heard on "Runnin' with the Devil." But Landee maintains it was just another day at the office.

"When I began working with Van Halen, I set up pretty much the same way I always had," says Landee. "For instance, on Alex, it was U-47s on the overheads, Sennheiser 421s on the toms, for the most part. But they just had a completely different sound, a different style of playing. I tried to stay away from a formula, but after the success of that first album, it was kind of inevitable."

In an effort to compensate for the group's live, one-guitar set-up, Landee decided to mix Edward slightly off-center, using a touch of delayed echo to fill up the opposite channel. "It made sense, because we really wanted to avoid overdubs," says Landee. "Plus, by putting the guitar down the middle with everything else, you'd wind up with the whole band track in mono. So it seemed like a reasonable solution."

Until the time Edward got into a car that happened to be short one channel. "Suddenly I get this phone call from the other side of the world, and it's Ed, wondering out loud why he couldn't hear his guitar playing," recalls Landee. "At that point, I began to wonder if that mix was such a great idea, after all."

It didn't matter. Completed in less than three weeks, *Van Halen* took just seven months to go platinum. At 10.5 million copies and counting, it remains the group's most commercially successful album overall. For his part, Landee would help craft the VH sound for another 10 years, finally leaving the group—and the record business altogether—in 1988.

"By then they'd become experts, and, as a result, there just wasn't any way to get them in and out quickly ever again," notes Landee, now a California-based software executive. "But for the longest time, that first album was the blueprint. I always knew they would eventually become proficient at making records, but back then, we just wanted to get them before they really knew what they were doing. I think we succeeded." HR

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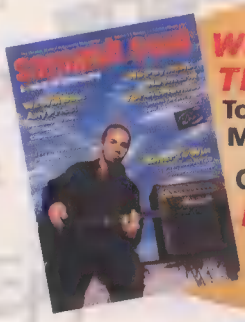

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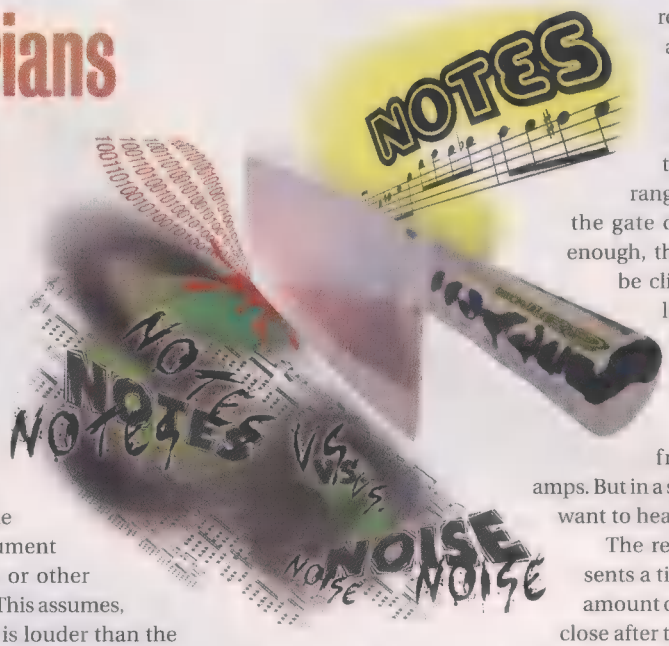
STUDIO BASICS

BY DAVID DARLINGTON

(Sonic) Barbarians at the Gates

"QUIET DOWN OUT THERE!"



The noise gate is one of the most helpful components of your outboard processing gear or the dynamics section on your digital mixer. It's also one of the simplest to use. Noise gates do what any gate is expected to do: open to let something through and shut when it has passed. In the case of your system, the sound of the instrument or voice is let through, while rumble, hiss, or other objectionable noise is barred from your mix. (This assumes, of course, that the sound of the instrument is louder than the noise you're trying to control.) Gates are especially helpful in controlling analog tape hiss, and they can also be used in a number of creative ways to alter sounds.

There are usually five controls on a gate: threshold, attack, hold, release, and range. Threshold refers to the level that must be present before the gate is opened. If the level is too low, allowing quieter sounds to pass through, then the gate may not really be helping you filter unwanted noise. On the other hand, if it is set too high, then parts of the sound you want to hear may be removed. Listen to the track in solo and adjust the threshold level until the gate opens easily whenever the sound is present. Be especially careful on sounds with lots of transient impact like drums, percussion, and pianos. Improper threshold levels can rob these sounds of the attack that helps our ears identify them, resulting in a mix that lacks punch and sparkle.

The attack, hold, and release settings operate much like the envelope on a synthesizer. Attack is the length of time it takes for the gate to spring open. Usually a short time is desirable to make sure the gate allows the full sound to pass through, but a slow attack can sometimes be helpful. For example, you may want to take the snap off the front of a sampled kick drum to make it warmer in the track. Be careful not to make the attack too short, or a popping sound could result each time the gate opens.

Hold is a duration setting, usually expressed in milliseconds, that determines how long the gate will stay open. You will want shorter values for things like snare and kick drums and longer values for cymbals and pianos. This control can be used creatively to make a long snare drum much shorter (the famous "gated snare") or to make a reverb tail stop abruptly for an unusual effect (the equally famous "gated reverb"). Leave this value a bit longer on sounds that have a lot of dynamic range like piano or vocals. If the gate does not stay open long enough, the ends of phrases might be clipped and natural noises like breath might be lost. Sometimes this is desirable, for example, in a loud rock vocal where there is a lot of leakage from drums and guitar amps. But in a soft ballad, you really don't want to hear the gate.

The release control also represents a time value, referring to the amount of time the gate will take to close after the hold time has elapsed.

The hold and release time work in conjunction to sculpt the end of the sound that's being gated. If you are removing noise from a reverb return, you will want a long release to allow the natural tail of the reverb to pass through. If you are truncating a snare sound to make it very short, then a small release time will be appropriate. Again, listen to the sound in solo and shape it with a combination of hold and release times until it sounds natural, but the unwanted noise is removed.

The range control sets the strength or dynamic range of the gate. Lower settings mean the gate is not closing all the way down, allowing some sound to pass through even below the threshold. As the range is increased, the gate closes farther until, at maximum range, it is fully closed.

Some gates have an external or "sidechain" input, allowing the sound to be shaped by another source. For example, the kick drum could control the bass guitar so that each time the kick strikes, the gate on the bass opens up. This would effectively make them seem "tighter" in their performance. You can send a low oscillator (like 50 Hz) through a gate and then control it with the kick drum sound, thereby adding an "808" to the existing kick. Another useful application of gates is to decrease the "roominess" on things like toms and cymbals. By lightly gating these sounds with a medium release, you can take out some of the background ambience while still maintaining the original sound.

Gates are your allies in controlling unwanted noise in your mix and, like all friends, they should not be mistreated. Don't gate everything and don't gate too strongly; it will suck the life out of your mix. Just use gates to help tame that unruly crowd. HR

LEVIN PFEUFER

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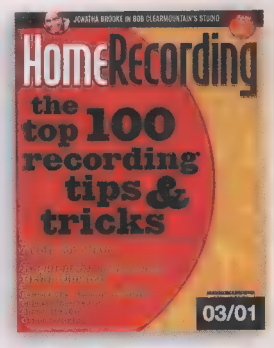

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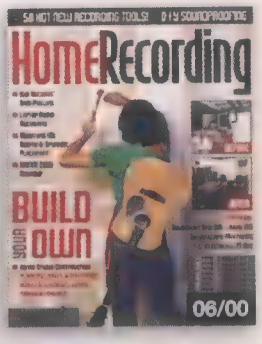

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HOME CLINIC

BY BABZ

More SysEx Secrets

TAKING CONTROL OF YOUR SYNTHS, PAINLESSLY

Last month we looked at SysEx data with a focus on the *bulk* dump, including dumps to back up a single patch, and to store the patch and performance data for a tune at the beginning of your sequences. SysEx messages can also be used to edit data that affects individual, discrete features (e.g., a parameter in a patch). You can then imbed that data in your sequence so that the changes or edits are made as your sequence plays.

Why do this and not just use a bulk dump? Because during a live performance you don't have time for 14 or 15 measures of SysEx to load—your audience would be waiting, tapping its feet, and looking at you through the dead air. Also, if you have a lot of tunes and use your workstation's internal sequencer, that's a lot of diskettes to keep accessible during a performance. In a studio situation, when we're concerned with tasks like archiving or sending the sequence to another studio and keeping as much information as possible with the sequence, we can use the bulk dump. But in live performance, economy is the key. You can use discrete SysEx messages to change only what you need to, thereby maximizing your use of disk space, load time, and user memory locations.

HOW NOW SysEX?

Most synths now come with a Parameter Address Map in the back of their manuals. Any parameter appearing in that Address Map can be addressed using a SysEx message or SysEx string. Examples include the waveforms that actually make up a patch, whether a certain waveform is active or not, velocity range, effects, and so on. Virtually any parameter that goes into making the patch what it is can be altered during a sequence.

People generally shy away from this because they have no clue how to read the address maps. Roland takes a lot of the confusion out of using SysEx with its Transmit Edit function, which essentially generates the discrete SysEx messages for you.

With the Transmit Edit function enabled (which can be found under SYSTEM/MIDI/Tx Edit), you can automatically generate and transmit the SysEx strings for any patch parameter you modify. It's recorded into your sequence and you don't ever have to get into sorting out those strings of numbers and code that might make your head feel like it sprouted a propeller and started to spin.

You basically back up one increment from the value you want, turn on your sequencer to Record, press whichever button modifies the parameter you want, and the sequencer records the resulting SysEx, which the synth itself generates for you.

For example, you may have a patch that uses the delay effect, but you don't want the delay on constantly. Perhaps you only want the delay during the big lead solo, or maybe at the end of a phrase to add a dramatic effect.

If you have a Roland XP/JV synth, check out preset patch PR-B 065: "Analog Seq," which uses the EFX delay effect. Record a track using this patch into your sequencer. Then with the Transmit Edit function engaged, go to another track on the same MIDI channel, and while recording another pass, turn the EFX button on and off.

FREE FILE

I've created a Standard MIDI File example sequence that can be downloaded at *www.homerecordingmag.com* and played back with a sequencer and any of the Roland JV/XP or XV series synths. This short example demonstrates how you can use the SysEx generated by the Roland's Transmit Edit function to engage and disengage the delay effect in time with the music. This was created simply by pressing the EFX button on and off at the right moment. No typing strings of numbers, no dizzying equations—I assure you, no creative processes were harmed in the making of this sequence. Have fun watching the EFX light go on and off!

And this is just the tip of the iceberg. Remember, in any edit screen for any parameter for any patch in any performance part, you can create these messages in exactly the same way—essentially by just pushing a button in a patch's edit screen while the song is playing and the sequencer is recording—and place them wherever you like in a song. Octave shifts, waveforms on and off, pan depth, tremolo rate, reverb decay time—anything you can sniff out in those edit screens is all part of the smell of SysEx. HR

LEVIN PFEUFER

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TALES FROM THE TRENCHES

BY ARTY SKYE

A Tale of Two Songwriters, Part II

ONE CAREER RISES, ONE BITES THE DUST—ALL BECAUSE OF STORAGE AND RECALL

In last month's episode, we peeked into the lives of two songwriters, Louie the Loser and Penelope Perfecto. Both were given the chance to place their songs in a feature film, providing they could make certain changes required by the film producer. Penelope had no problem, because her notes and documentation were accurate. She was able to get the deal. Louie, on the other hand, couldn't recreate his work because of his disorganized or nonexistent notes and documentation.

After a week, Louie finally had to own up—he couldn't get his mix back, so he couldn't make the changes. With Louie's song out of the picture, Harry decided to use another one of Penelope's songs. His movie hit No. 1 at the box office, and Penelope was a smash. Soon she had hit songs in movies and on TV. She was writing for well-known recording artists and had to hire a staff just to keep up with the demand!

Louie should have learned that accurate documentation, proper storage, and the ability to perform a precise recall play important roles in the success of studio projects. Session information generally falls into three categories, and various methods are used to store and retrieve data.

GENERAL INFO

Information in this category would include song title and alternate titles, artist, producer, engineer, date, client, sequencer type and version, offset, BPM, syncbox, timecode, and tape number. Traditionally, much of this information would be recorded on track sheets. Many producers prefer to use notebooks, and that's the first place they look when they need to recall session data. The dangerous thing about this is that if they lose the book, they can lose a tremendous amount of valuable info.

Computer database programs are an excellent way to store your general info, and all the search features work to your benefit. A program like Filemaker Pro allows you to customize the database to your own specifications. Track Notes (for PCs) from Virtual Software Systems is designed for recording studios and allows you to enter detailed information about every session.

SOUND SOURCES

This would include samples, drum-machine data, hard-disk info, sound modules, and patches. One of the wonderful features that most sequencers have is the "comments" or "notes" field. You can enter all the info about a particular track. You can also use "default patch" settings, but they may not be valid on a different synth or if patches get reassigned on the original synth or module.

For any modified patches, you can save the system-exclusive information right onto the corresponding track or create another track just for the SysEx. If you use multitimbral synths in performance mode, a SysEx bulk dump might do the trick. Librarian/editor programs like Unisyn from MOTU are great for storing SysEx data for your entire MIDI system.

MIX INFO

For outboard gear, patches, inserts, rental gear, automation data, and mixing board settings, professional recording studios use recall packs to store all the information for a particular mix session. The packs consist of paper templates of all of the outboard gear in the studio, along with templates for all patchbay routings. An assistant copies down all the settings for every piece of gear used in the session, along with every patch in the patchbay, and stores all of the console settings and automation data on a disk (provided the console has recall and automation features).

Of course, inexpensive digital mixers have changed the rules of the game, making it much easier to store and recall mix data. But classic methods are still necessary. One engineer uses a video camera and pans very slowly in close-up across his older analog console. To recall a mix, he plays the tape back and pauses the sections he needs to recall. In the old days, engineers would take Polaroid snapshots of the console. To bring back recalls of your mixes, make some blank templates of your outboard gear faceplates, and use them. HR

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